Access to Microfinance & Improved Implementation of Policy Reform (AMIR Program)

Funded By U.S. Agency for International Development

Environmental Review of the Jordan - U.S. Free Trade Agreement

Final Report

Deliverable for Policy Component, Task No. 4.1.25.3
Contract No. 278-C-00-98-00029-00

August 2000

This report was prepared by EnvrioConsult in collaboration with Chemonics International Inc., prime contractor to the U.S. Agency for International Development for the AMIR Program in Jordan.

ACKNOWLEDGEMENTS

The Jordan Negotiating Team for the Jordan-U.S. Free Trade Agreement wishes to acknowledge the many comments and suggestions received from interested stakeholders who attended the public consultation seminar, and responded to the Notice requesting comments on the proposed Free Trade Agreement.

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1. Executive Summary

1.1 Objectives of the Jordan-U.S. Free Trade Agreement

The importance of the proposed Jordan-U.S. Trade Agreement (FTA) is clear. This agreement will serve as an integral component of Jordan's economic vision of the future, and—together with other important trade liberalization measures such as Jordan's accession to the WTO (World Trade Organization) and trade liberalization agreements involving various Arab region countries as well as European trading partners (Euro-Mediterranean free Trade Zone MFTZ)will provide clear evidence of the nation's commitment to the pursuit of economic development, rapid modernization of Jordan's economic structure, and sustained expansion of economic opportunities for all of Jordan's workers and businesspeople.

As a matter of national development policy, the principle of trade liberalization is beyond debate. To survive and prosper in the international economic arena, Jordan must continue on the path of adopting trade policies and practices that are in harmony with those being followed by its trading partners.

Changes brought about by trade liberalization, however, will also pose a challenge to Jordan's environmental resources and institutions, and thus to the long-term well being of Jordan's citizens and society. The way in which this environmental challenge is met will have an enormous effect on new economic opportunities that are created and shared by the citizens of Jordan, and on the sustainability of the economic benefits that are generated.

It is thus essential that Jordan (with the help of its trading partners and international donors) also pursue an environmental vision that is parallel to and as robust as its economic development vision. Jordan must rise to the challenge posed by the economic changes that will surely be brought about in the coming decades by trade liberalization. In particular, Jordan must view the adoption of trade liberalization measures—including the Jordan-U.S. Free Trade Agreement—as an opportunity for upgrading its environmental framework and maximizing environmental benefits of economic growth, while minimizing potential negative impacts.

Some specific actions that can be taken are summarized below, and discussed in more detail in the body of this environmental review report.

1.2 Improving the Institutional and Legislative Framework

The complexity and diversity of environmental issues raised by the FTA and other emerging trade liberalization initiatives in Jordan are beyond the technical and administrative capabilities of the current institutional and legislative framework. A comprehensive upgrading of the capacity of environmental sector in Jordan is essential for achieving an effective, transparent, and cohesive implementation of the nation's environmental policy objectives.

Above all, there is a pressing need for the establishment of a Ministry of Environment in Jordan, in order to centralize and unify environmental policymaking and planning, and to improve the monitoring and enforcement of fundamental environmental standards. A clear statement to this effect has issued by HM King Abdullah, as reflected by the Prime Minister in his recent Policy Statement to the Parliament.

To overcome technical and administrative difficulties of environmental management and to cope with the ever-increasing complexity of environmental problems and issues, two very important improvements have to be implemented:

- Raise the level of environmental decision making to an independent and technical ministerial level; and
- Utilize high-caliber human resources to modernize the structure of, as well as coordination among, environmental public institutions at a professional level.

In brief, there is a clear necessity to establish an independent, highly qualified environment ministry responsible for coordination and enforcement of environmental protection measures. Major legislative amendments will be necessary in order to establish such an organization, and to assure that it will have adequate powers and resources to carry out its mandate.

1.3 Capacity Building and Training

Capacity building of environmentalists in Jordan is also an essential requirement. Although technical training needs improvement in all its areas, this need is most evident in the field of environmental management, since Jordanian expertise and practical experience in this field is narrow. The emerging trends of globalization and the linkage of environment to economics over the past two decades has been far-reaching, and has transformed environmental concepts beyond the bounds of classical conservation and pollution control measures. To deal effectively with this new situation will require the development of a new generation of highly skilled human resources.

1.4 Other Basic Improvement Needs

Other issues related to improving Jordan's institutional and legislative frameworks include:

- Strengthen the enforcement of and compliance with national environmental laws, and upgrading them to reflect international standards and regulations, including those pertaining to Multilateral Environmental Agreements (MEAs).
- Encourage, in a highly transparent manner, the participation of the public community in all aspects of environmental management. This could be done through workshops and public hearings, and by establishing a specialized *"environmental hot line"* to receive and answer inquiries and complaints.
- Encourage voluntary implementation of environmental management systems via private sector adoption of ISO 14000 environmental management systems and environmental auditing programs. This should be linked to increasing Jordan's competitive ability in the global market and providing appropriate incentives (i.e. by removing all trade barriers and taxes on environmentally friendly high-tech and enhancing technology transfer).

- Establish a strong and effective network of stakeholders related to trade and environment comprising the government, private sector, and NGOs. This network could establish a permanent committee with a secretariat responsible for follow-up and monitoring of the effects of the Jordan-U.S. FTA and other trade liberalization measures.
- Review and establish all possible links with other trade agreements (WTO, EURO-MED FTZ, Arab FTZ) and MEAs (Montreal, Basel, CITES, CBD, CCD) to which Jordan is a signatory. Both synergistic and conflicting provisions must be identified to safeguard the cohesive implementation of Jordan's commitment to the international community.
- Identify and clarify the possible role of some Jordanian public institutes related to the environment and trade dualism. Some issues for example are the role of the Standards and Methodology Department in setting standards, and the General Supplies Department's role in procurement and international bidding in relation to the environmental added value in procurement and bidding.
- Assess possible challenges of Jordanian environmental standards by U.S. investors and the possible role of U.S. environmental standards as non-tariff barriers to Jordanian exports.

Adoption of the above improvements to Jordan's regulatory and institutional regime for environmental protection will help assure that the environmental consequences of the Jordan-U.S. FTA are properly managed, and provide real and lasting benefits to the nation.

1.5 Continuation of the Review of the Environmental Effects of FTA Implementation

Finally, this initial environmental review effort is only a beginning. Further exchanges of information between all stakeholders should continue during the period of final negotiations and ratification of the Jordan-U.S. Free Trade Agreement. Once the agreement is in operation, continuing efforts must be made to monitor, evaluate, discuss and respond to environmental changes that occur in coming years. Therefore, our preliminary efforts to develop a strategy of environmental response must be extend into the future. Some specific actions include:

- Ensure continuity of the evaluation process for FTA implementation via performance monitoring and environmental watch programs. *This could be done through a joint Jordan-USA advisory committee, and an independent efficient secretariat.*
- Establish a joint dispute settlement mechanism to resolve environmental issues related to the FTA once implementation results in specific cases and generates issues previously. This mechanism should be supported with a strong and transparent legal framework to handle disputable issues.
- Create an Office of Trade and Environment, to be eventually incorporated into a Ministry of Environment, to coordinate Jordan's activities in this field, within Jordan itself, and throughout the broader Eastern Mediterranean region.
- Implement and enforce environmental regulations pertaining to industrial and investment activities such as Environmental Impact Assessment, Environmental Auditing and Licensing/Permitting Regulations

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2. Introduction and Readers' Guide

2.1 Scope and Purpose of the Jordan-U.S. Free Trade Agreement

The Governments of the Hashemite Kingdom of Jordan and of the United States of America have announced their intention to negotiate a free trade agreement. Given the anticipated economic benefits deriving from such an agreement, both Jordan and the United States are committed to undertaking and concluding an agreement as expeditiously as possible. At this point, both parties are hopeful that a draft FTA agreement can be initialed by as early as the end of July 2000.

Although the precise terms of this agreement are still under negotiation, the agreement is expected to seek, over time, to eliminate customs duties and commercials barriers to bilateral trade in U.S.- and Jordanian-origin goods. In addition, the agreement will include provisions addressing the following trade and trade-related topics:

- Trade in services,
- Property rights,
- Phasing of customs duties
- Trade-related aspects of intellectual property rights,
- Trade-related environmental and labor matters, and
- Other issues.

2.2 Expected Growth in Trade and Investment

Implementation of the Free Trade Agreement (FTA) is expected to facilitate a substantial expansion of trade between Jordan and the United States. This, in turn, should generate significant opportunities for Jordanian businesspeople and workers, including increased profits, new employment opportunities, and greater incomes.

A growth in trade activity could also lead to increased investment in manufacturing, shipping facilities and equipment within Jordan, drawing upon capital investment funds from the U.S. and perhaps other countries that wish to take advantage of the trade benefits that will apply to goods of Jordanian origin. New plants and equipment should produce measurable productivity gains for the Jordanian economy, and contribute to the growth of economic opportunity for its citizens. Experience in other nations, for example, has shown that new jobs related to export growth tend to be higher paying, better quality jobs, and that export products offer greater profits

A discussion of recent and potential future trade flows between Jordan and the U.S. is presented in Section 3.0 of this report.

2.3 The Need for an Environmental Review of the Free Trade Agreement

Both governments have initiated independent environmental reviews of the possible environmental consequences of the proposed free trade agreement.

In Jordan, the Jordanian Negotiating Team on the FTA is conducting this review of the potential effects of the agreement on the Jordanian environment pursuant to Jordan's *Environmental Law No. 12 of 1995*, which requires that environmental considerations be taken into account when undertaking economic development activities within the country.

Jordan's environmental review has four principal purposes:

1. First, it is intended to promote transparency and participation in decision making, by providing a consultative vehicle for obtaining a broad range of input from businesspeople, environmental leaders, government officials, academic experts, and individual citizens on their expectations and concerns as related to the possible environmental effects of the agreement;
2. Second, the environmental review will provide information that will help the Negotiating Team to shape important negotiation points, particularly those dealing with environmental issues, during the final stages of bilateral negotiations;
3. Third, the environmental review will identify and recommend strategic actions that Jordanian decision makers (in both the public and the private sectors) should take to avoid or reduce possible negative impacts, and to maximize potential environmental opportunities brought about by the FTA; and
4. Fourth, this initial environmental review will create a process for the continuing review and appraisal of changes in the future, with a view towards increasing the will and the capacity for better managing Jordan's environmental resources.

In the United States, a parallel environmental review is being conducted by the Office of the U.S. Trade Representative (USTR), through the Trade Policy Staff Committee (TPSC), pursuant to the U.S. *Executive Order 13141 on Trade and Environment.* This very recent Executive Order (signed by President Clinton only last November 16, 1999) commits the United States to a policy of "assessment and consideration of the environmental impacts of trade agreements." Bilateral free trade agreements are included in the list of actions for which environmental assessments are mandatory. It is intended that such environmental assessments be performed early enough to be of use during the relevant trade negotiations. The U.S. Executive Order states:

> "As a general rule, the focus of environmental reviews will be impacts in the United States. As appropriate and prudent, reviews may also examine global and transboundary impacts."

Because of this mutual recognition of the importance of trade-related environmental concerns, these issues have figured early in the discussions with senior U.S. officials regarding the scope of the FTA. They will continue to play a significant role throughout the ongoing negotiation meetings, and afterwards during the implementation phase of the FTA. Sections 4.0, 5.0, and 6.0 of this report constitute the core of the environmental review findings as of this point in time, while Section 7.0 presents a series of recommendations for action in response to these preliminary findings.

2.4 Public Consultation, and Future Continuity of the Environmental Review Process

Under the guidance of the Jordanian FTA Negotiating Team, this review of environmental considerations related to the FTA is being developed in close consultation with numerous interested parties and stakeholders (see discussion in Section 8.0 of this report). This review is not intended to be a final step, but rather an initial step in a continuing process of environmental impact identification and evaluation.

In the short term, recommendations resulting from the review process will help shape the final terms of the FTA. In the long term, as experience is gained with the FTA in coming months and years, the environmental review will be refined and extended, periodic status reports will be issued, additional public meetings will be held, and appropriate recommendations developed or refined to address specific issues that may emerge.

3. Expected Changes to Trade and Investment Flows

3.1 Current and Recent Trade Volumes

The current volume of Jordan-U.S. trade is small: Jordan does not appear in the listing of the top 80 trading partners of the United States. Moreover, due to the massive size of the U.S. economy, increased trade between Jordan and the U.S. is not expected to generate significant effects on the U.S., either in economic or environmental terms. However, the volume of trade is substantial, in relative terms, to the Jordanian economy, and could become an increasingly significant factor in future years.

Jordanian Nominal GDP in 1999 amounted to $7.61 billion; thus, the volume of trade between the two nations is approximately 4.0 % of the Jordanian GDP. However, relative to imports to Jordan, the total dollar value of U.S.-to-Jordan trade in 1999 was nearly 7% of the value of all imports to Jordan. This figure is expected to rise once the FTA is in place.

Table 3.1 The 1999 Trade Flows Between Jordan & the United States

(By 1-digit SITC commodity, all figures in millions of dollars)

1-Digit SITC	Commodity	U.S. to Jordan	Jordan To U.S.
0	Food and Live Animals	62.26	0.28
1	Beverages and Tobacco	11.28	(Z)
2	Crude Materials, Inedible, Except Fuels	14.98	0.65
3	Mineral Fuels, Lubricants and Related Materials	0.68	(-)
4	Animal and Vegetable Oils, Fats and Waxes	23.56	0.15
5	Chemicals and Related Products, N.E.S.	13.43	0.70
6	Manufactured Goods Classified Chiefly by Material	12.44	1.11
7	Machinery and Transport Equipment	91.20	0.67
8	Miscellaneous Manufactured Articles	30.60	8.40
9	Commodities and Transactions, N.E.S.	15.21	18.93
TOTAL	**(1999)**	**$275.64**	**$30.92**
	(1998)	**$363.90**	**$17.10**
	(1997)	**$387.70**	**$26.00**
	(1996)	**$415.80**	**$26.30**

NOTES: (-) Represents zero

(Z) Represents less than 0.05

SOURCE: U.S. Census Bureau, Foreign Trade Division, Data Dissemination Branch (1999 figures)

U.S. Trade Information Center, International Trade Administration (1996-1998 figures)

Jordanian imports from the U.S. have been declining in recent years, largely due to the slow pace of growth in the Jordanian economy and the decline in personal incomes. Exports to the U.S., however, have recently begun to rise, due in part to the growth of QIZs (Qualified Industrial Zones) in Jordan. Goods produced in QIZs, which require input from both Jordan and Israel, are allowed duty-free entry into the U.S.

Exports to the U.S. for the first four months of 2000 have already reached a total of $13.7 million, based on preliminary figures released by the U.S. Census Bureau's Foreign Trade Division. On an annualized basis, this would put Jordan on course for a 33% increase in exports to the U.S. in 2000, compared to the 1999 figure, and a 140% increase compared to 1998. (For the same four-month period in 2000, imports to Jordan from the U.S. totaled $105.2 million.) Several thousands of new jobs have been created since 1998 as a result of the QIZ initiative, and this provides a foretaste of what might be expected as a result of a free trade agreement having nationwide applicability.

3.2 Sectors Expected to Realize Increased Activity

Principal growth sectors in the Jordanian economy include mineral resources, pharmaceuticals, tourism, and telecommunications/information technology. Other areas of potential growth as a result of the QIZ developments (which could be expected to increase even further after implementation of the FTA) include textiles, various light/medium manufacturing industries, and assembly of small-scale electronics. The possibility of increased foreign investment, whether from the U.S. or elsewhere, would increase significantly once the FTA is in place, since goods produced anywhere in Jordan could be exported to the U.S. on a duty-free basis.

In the mineral resources sector, U.S. companies have invested in recent years in various oil and gas exploration activities, and in the potential exploitation of Jordan's extensive oil shale reserves. A U.S. based firm has entered into a joint venture with a Jordanian partner to extract bromide and other chemicals from the Dead Sea. A wide range investment opportunity exists in Jordan for the development and export of other minerals and chemical products, such as copper, magnesium, gold, uranium, sand glass, and kaolin, among others.

In energy production, foreign investment can be foreseen in the development of power generation facilities, particularly now that the sector has been opened to private sector competition.

Similarly, the privatization of the telecommunications industry and the sharp increase in the number of phone lines in Jordan is expected to attract U.S. and other foreign investors, as well as providing a rapidly expanding market for U.S. companies selling communications hardware, software, and services.

In the pharmaceuticals and medical equipment and services sector, past uncertainties over patent rights appear to have been resolved, and the sector is poised for future expansion and export growth. This possibility could be enhanced if U.S. or other foreign pharmaceutical companies decide to make investments to take advantage of the modern facilities, low-cost labor base, and skilled work force that exist in Jordan. Further, continued expansion of Jordan's medical services system is expected to attract patients from a larger regional market, while, on the import side, the expansion of such facilities can be expected to increase demands for medical equipment and

supplies from U.S. and other sources. (Of total imports from the U.S. in 1998, $16.2 million were for medical equipment.)

Demand for transport equipment and spare parts is also expected to be boosted as Jordan's economy enters a renewed growth cycle. Potential for increased importation to Jordan of U.S. made trucks, automobiles and aircraft equipment is high, notwithstanding stiff competition from European and Asian competitors.

Agricultural products, including grains, various vegetable oils, and other food products, already constitute a major component of Jordanian imports from the U.S. Again, while competition from other suppliers is stiff, the market for imported agricultural products is likely to increase, particularly in light of scarcity of agricultural water resources in Jordan.

Tourism is a major generator of foreign exchange for Jordan, and is attracting substantial foreign investment, which is expected to grow in the future.

All of these sectors represent significant investment opportunities for U.S. companies, as well as for the importation of U.S. manufactured equipment and supplies and, ultimately, for the exportation of products to the U.S.

3.3 Reducing the Balance of Trade Deficit with the United States

Although a balance of trade deficit is not necessarily detrimental, particularly on a nation-to-nation basis, Jordan must exercise care that the FTA does not aggravate the existing unfavorable balance of trade situation vis-à-vis the United States. The reduction of customs duties must be phased and regulated to avoid too great of a shock to the Jordanian economy and social sector.

In time, however, a low-cost labor base and the availability of capable, skilled workers should allow Jordan to develop high-quality, and competitive industries capable of competing in the international arena. U.S. and other investors need to be aggressively sought out to take advantage of these conditions, and Jordanian businesspeople need to be committed to the adoption of up to date business practices that will allow effective competition on the international level.

3.4 Other Important Variables Affecting Jordanian-U.S. Trade and Investment

While trade liberalization measures such as Jordan's accession to the WTO, the initiation of QIZs, and the proposed Jordan-U.S. FTA can do much to encourage trade and investment, it is important to bear in mind that other critical variables will also have a substantial impact on the timing and magnitude of Jordan's growth in foreign trade. These other variables include:

- the state of the world economy;
- domestic monetary, budgetary, and taxation policies;
- regional political and military stability;
- natural and man-made disasters (e.g., drought, earthquakes, etc.); and
- others.

A sudden or unexpected change in these factors can disrupt the forward momentum that appears to have been inaugurated. By the same token, an improvement of conditions in these areas (such as a

resolution of the Israeli-Palestinian disputes, or the lifting of the trade embargo with Iraq) could further enhance the overall economic situation of Jordan.

4. State of the Environment

4.1 Existing Conditions in Jordan, and in the Region

Jordan has a total area of 8.9 million hectares, and a population of 4.9 million persons. The country is divided into three geographic zones. From west to east these regions are:

The ***Jordan Rift Valley***, a fault that extends from Lake Tiberias in the north to the Gulf of Aqaba in the south. The Jordan Valley, the Dead Sea and Wadi Araba are located in this zone. The Dead Sea, at an elevation of 400 meters below sea level, is the lowest depression on earth. Average rainfall in this region is 250 to 350 mm per year in the Northern Jordan Valley, less than 100 mm in the southern Jordan Valley Dead Sea, and less than 50 mm in Wadi Araba.

The ***Mountainous Region***, forming the eastern boundary of the Rift Valley and extending from Lake Tiberias to the Gulf of Aqaba. Mountains in this zone have elevations ranging from 800 to 1,300 meters. The region has a relatively mild climate with dry, hot summers and winter rains. The higher elevations receive occasional winter snows. Average annual precipitation in the zone varies from 600 mm in the north, to 100 to 300 mm in the south. Ninety percent of Jordan's population lives in the North zone.

The ***Eastern Desert*** (also known as the ***Badia***) has an average rainfall of less than 50mm which lies east of the Mountainous Region and covers 80 percent of the land area of Jordan. This region is characterized by a dry, hot climate. Most of the zone is flat or hilly, but in the south lays the two highest mountains in Jordan, Rum Mountain (1,753 meters) and Um Eshrin Mountain.

The most common ecosystems in Jordan are deserts in the east and south, bush steppe in the Mountainous Region and in the northeast Badia, and steppe grasslands and Mediterranean scrub in the Mountainous Region. Juniper and oak woodlands are found at higher elevations in the mountains, as well as planted pine forests. Mud lands and some wetlands are located at several locations throughout the country. The Gulf of Aqaba contains some of the most northern coral reefs and mangrove stands in the world. The Gulf supports over 1,000 species of fish.

Only about 10 percent of the total land area (primarily in the Jordan Valley and Mountainous Region) is cultivable, of which only 4.2 percent is suitable for rain-fed farming. Most of the intensive fruit and vegetable production depends on the 77,000 hectares under irrigation and about 30,000 hectares in the Jordan Valley.

Jordan's primary mineral asset is phosphate, which is estimated at over 1,500 million tons and located in the southern eastern desert. The Dead Sea is mined for dissolved salts, including potash, bromide, magnesium chloride, and sodium chloride. Although Jordan has an estimated 50 billion tons of oil-bearing shale rock reserves, their exploitation is still uncertain. Natural gas is produced in the Risha region, and is used for generation of electricity about 20% in the country.

Jordan is thus a country with limited natural resources, an arid climate, widespread poverty, and a high population growth rate. In combination, these conditions make Jordan vulnerable to a number of environmental challenges, the principal one being a lack of adequate water resources.

Water Supply. Per capita water availability was estimated (in 1995) to be 200 cubic meters per annum, one of the lowest rates in the world. By the year 2025, based on recent population projections, this figure may fall to below 100 cubic meters per person. Already, Jordan total water demand for municipal, industrial and agricultural uses exceeds sustainable yields. A number of chronic conditions account for Jordan's water problems, including:

- limited natural water resources (over 90% of the land area receives less than 200 mm of rainfall per year)
- reduced water quality, due to pollution from inadequately treated domestic and industrial sewage, and to overpumping of limited groundwater aquifers
- leaky water distribution networks (causing losses of up to 35% of the total supply)
- illegal connections and unauthorized private wells
- inefficient water management practices (including a high level of demand for water from the agricultural sector, amounting to nearly 75% of the nation's water consumption)
- inefficient water pricing policies, particularly in the agricultural sector

Rapid population growth due to natural increase and the influx of refugees has also placed a strain on Jordan's water resource base. Water scarcity is an acute regional problem, and is likely to be the major constraint to economic growth, and a continuing source of potential conflict.

Wastewater Treatment. The Government of Jordan is making a concerted effort to construct wastewater treatment plants in urban areas. Nevertheless, a large proportion of the county's urban residential areas still lack proper sewage treatment, as do most industrial zones and rural areas.

Industrial wastewater poses particular threats to public health, and to the preservation of limited water supplies and soil quality. Proper treatment and recycling of industrial wastewater in "closed cycle" systems is not currently widespread, but will become an increasingly important technique to be utilized in the future as the nation's industrial activities expand, particularly in the Amman/Zarqa basin, and in the vicinity of the Port of Aqaba.

Untreated runoff from agricultural areas contains high levels of pollution from pesticides, fertilizers, and animal wastes.

Air Quality. Jordan's air quality suffers from high concentrations of particulates, due in part to natural conditions. In addition, increasing levels of man-made air pollution are present in Amman where surrounding hills trap emissions, and where nearly 2/3rds of the nation's 450,000+ registered vehicles are located. Almost all use leaded gasoline or high sulfur content diesel fuel. As industrial and port activities increase, in tandem with economic growth, the potential for air pollution will also be exacerbated.

Although Jordan is not a heavily industrialized country, several of its major industries have the potential to emit high levels of air pollutants. These include all phases of the cement and phosphate

industries: namely, extraction, processing, and shipping. In addition, oil refinery and power generation plants can be major sources of air pollution. These industrial activities will pose further risks, as Jordan's economic activity expands, unless adequate enviromental management and mitigation measures are taken.

Municipal Solid Waste. Although most major urban areas have an acceptable level of waste collection services, that is not the case in smaller villages and rural areas. Moreover, proper disposal of municipal solid waste is lacking throughout the country. Leachate from poorly managed solid waste disposal sites aggravates groundwater pollution in some areas, while air-borne waste (especially plastic bags) causes major problems for wildlife and agricultural livestock, in addition to its aesthetic impact. Waste separation and recycling do occur as informal activities, but generally not in an organized and hygienic way.

Industrial and Hazardous Waste. Although residential households generate a small quantity of hazardous waste, by far the greatest amount is due to industrial and medical facilities. Jordan currently lacks a hazardous waste disposal facility. Nationwide, it is estimated that nearly 20,000 tons of untreated hazardous waste exists.

Mine tailings are another major source of potentially toxic industrial solid waste. If not properly managed, mine tailings can also contribute to serious air quality and water quality problems.

Land Resources. Due to a lack of proper land management, the natural landscape is seriously degraded in areas of uncontrolled urban expansion, mining sites, overused grazing lands, improperly irrigated farm lands (with a resulting increase in soil salinity), and over-harvested forest lands. Given the harsh and arid climate of Jordan, degraded lands in rural areas are generally highly susceptible to soil erosion and/or desertification. Secondary impacts include loss or destruction of habitat for wildlife, which has a major national and international significance for biodiversity. However, several wildlife and rangeland reserves were being established.

Coastal and Marine Resources. Although Jordan's coastal zone is quite small, it is exceptionally rich in natural productivity, quality, and beauty. The coastal zone and marine resources are under severe threat from tourism and industrial activities in Aqaba (as well as in neighboring Eilat.) As with land resources, Jordan's coastal and marine resources raise significant issues of transboundary impact.

Unique Resources. Jordan is custodian for some of the most unique and irreplaceable natural and cultural resources in the world, including the Dead Sea, Wadi Rum, Petra, and numerous biblical, Roman and Islamic Archeological sites. All of these resources are under threat from increased pollution and other environmental stresses. Transboundary and international impact issues are associated with the risk to these resources.

4.2 National Environment Strategy and National Environmental Action Plan

During the decade of the 1990s, Jordan began to mobilize to address the critical environmental problems outlined above. In 1991, the **National Environment Strategy for Jordan** was published. Prepared with the contribution of leading Jordanian and international scientists, academics and public officials, the result was a comprehensive resource book of information and guidelines for action. This effort was the first national assessment of environmental issues and improvement strategies conducted by a Middle Eastern nation. Topics include housing and community development, agriculture, and population, as well as comprehensive treatment of physical environmental conditions and prospects. Some 400 recommendations for environmental protection and conservation were identified.

While the National Environment Strategy generated recommendations, it did not prioritize them. However, the five-year **National Economic and Social Development Plan, (1993-1997)** defined environment as a cross-sectoral issue, and included it as a significant past of the Plan's overall economic and social objectives:

> "Conserving the environment and preventing deterioration of its component elements through regulating economic and human activities in such a way as to secure a healthy environment for people as well as for fauna and flora, to ensure the non-depletion of exhaustible resources and to check soil erosion, desertification and pollution" (Objective 8, p. 101.)

In addition to this broad objective, the National Plan identified five environmental challenges for the 1990s:

- Reducing the water deficit
- Limiting water salinization and depletion
- Using environmentally safe agricultural methods to ensure that levels of insecticide residues fall within accepted limits
- Recycling and reusing wastes
- Adopting methods to manage hazardous and radioactive chemicals

The National Environmental Action Plan, published in 1995, provided additional specificity and prioritization. This document provides a comprehensive assessment of environmental problems and opportunities in Jordan, combined with a prioritized and phased plan of action for addressing these issues. The NEAP identified 41 priority environmental needs, which included four cross-sectoral environmental management capacity building needs and 37 sectoral environmental actions. Immediate attention was recommended for the following "short list" of 19 priorities:

1. National environmental management by the General Corporation for Environmental Protection
2. Rehabilitation of wastewater treatment plants
3. Upgrading of industrial technologies to minimize water pollution
4. Proper Pricing of water
5. Enforcement of regulations in the water sector
6. Restructuring of the water sector
7. Development of water resources under the Jordan-Israel peace treaty
8. Development of a national land use planning/zoning system

9. Management of agricultural plastic waste
10. Preservation of forest lands
11. Development of regulations to control urban/industrial pollution
12. Treatment, storage, and disposal of hazardous waste
13. Study and plan for waste management in municipality of Greater Amman, and country-wide priority actions for waste disposal sites
14. Closure and replacement of waste disposal sites at Marka and Akaider
15. Urban and regional land use planning
16. Improved management of national cultural and natural heritage
17. Development of a national plan for heritage utilization
18. Completion of a protected area network
19. National biodiversity inventory

While not all of these priorities have been achieved, substantial progress is being made on many of them. Nevertheless, considerable work remains in order to reach the levels of environmental protection sought by the above groundbreaking studies.

4.3 Environmental Planning and Regulatory Context

Partially in response to recommendations set forth in the above studies, the Government of Jordan enacted the **Environmental Protection Law No. 12 of 1995.**

Composed of 36 Articles, Law No. 12 spells out a general, but comprehensive regime for managing and protecting Jordan's environmental resources. The two most prominent features of this law are:

1) Consolidation of environmental protection authority in Jordan under one legislative umbrella, and
2) Establishment of a new government entity called the "General Corporation for Environmental Protection" (GCEP) to serve as the central regulating authority for all environmental laws in Jordan.

Under Law No. 12, the GCEP is to exercise the following functions

- Draw out the general policy for environmental protection, with the strategy and plans for implementation;
- Monitor environmental parameters;
- Prepare specifications and parameters for environmental components;
- Carry out research and studies relevant to the environment;
- Monitor utilities, public and private activities, including projects and companies, to ensure their compliance with environmental parameters and specifications;
- Lay down regulations, specifications, and environmental conditions;
- Supervise and conduct environmental impact assessments for projects;
- Lay down rules for handling hazardous waste;
- Prepare plans for environmental emergencies;
- Issue public awareness posters, etc.

Law No. 12 further states:

"The Corporation…shall be entrusted with protecting the environment from pollution in relation to the sectors of water, air, soil, flora and fauna, and marine environment, as provided for in this law."

Passage of Law No. 12 was thus clearly a positive step forward for Jordan in terms of focusing its efforts and consolidating its authority to protect national environmental resources. But while improvements may exist on paper, several obstacles to the effective implementation of this law have led to frustrations within both the public and private sectors. While this law has done much to advance the cause of environmental protection in Jordan, it is widely agreed that additional, vigorous action is required on the part of the Government (see Annex C of this report).

Some of the key institutional and regulatory problems that require immediate attention include:

- Need to clarify roles and responsibilities for environmental policy making, planning, and programming at the national level, and to properly coordinate with local and regional authorities
- Need to issue detailed by-laws to provide further guidance for a number of key environmental matters which are mentioned but not fully spelled out in Law No. 12
- Need to assure adequate sources of funding for environmental protection and management programs, including funds for the acquisition, remediation and management of environmentally significant land and marine areas
- Need to develop effective inspection, enforcement, and pollution abatement programs, involving appropriately trained, equipped, and empowered technical and legal staff
- Need to establish clear environmental protection objectives, to develop related environmental quality indicators, and to periodically collect relevant data in order to measure progress in achieving the defined objectives
- Need to strengthen all public agencies dealing with environmental matters through the provision of increased training and technical assistance
- Need to encourage active and meaningful participation by non-governmental organizations (including environmental groups, business associations, and academic and research institutes) in all aspects of environmental management and protection

Annex C of this report contains a further analysis and review of the achievements as well as the deficiencies of Law No. 12.

4.4 Environmental Compliance and Enforcement: Adequacy of Institutional Capability

It is implicit in the above analysis that the current environmental enforcement capabilities of the GCEP are severely lacking. In the absence of clear standards and regulations, a shortage of trained inspectors and legal officers, and an absence of resources to monitor discharges and measure violations with the degree of accuracy required to support legal action, it could not be otherwise.

Moreover, the government has not yet begun to use alternative methods to obtain compliance, including economic instruments and incentives (pricing, penalties, taxation, etc.) and voluntary self-regulation (environmental management systems, environmental audit programs, negotiated compliance programs, etc.)

All three methods of achieving compliance deserve careful attention, once a sound foundation for environmental protection has been put firmly in place.

4.5 Role of NGOs and the Private Sector in Pursuing Environmental Protection Goals

Active involvement by NGOs and the private sector are essential for assuring transparency and accountability, and for garnering widespread public support for environmental protection programs. Educational and awareness programs are essential elements of a strategy to foster participation of non-governmental associations, business groups, and individual citizens.

The public consultation process being followed in the environmental review of the Jordan-U.S. Free Trade Agreement can serve as a starting point for such programs (see description in Section 8.0 and in Annex B of this report.)

4.6 Need for Improved Data Collection, Environmental Quality Indicators, and Monitoring

Accurate and timely data are essential to every phase of environmental management, from the initial creation of strategies and objectives, to the setting of standards, to program development, to project definition, to program and project evaluation, and finally, to regulatory enforcement of environmental standards.

The ability to develop and achieve workable strategies, plans, programs and other environmental actions must be done in a way that allows for precise measuring and evaluating of achievements over time. A set of environmental quality indicators should be created that address the identified environmental goals and objectives of Jordan.

To be most effective, it is important to collect as little data as is absolutely needed, since data collection, storage, retrieval, analysis, and dissemination efforts are time-consuming and costly. Carefully constructed environmental quality indicators can help minimize data collection efforts by focusing on key data elements that will be usable for more than one application.

A national Task Force on environmental data collection should be created, representing all key stakeholders and staffed by skilled professionals. The Task Force should be charged with developing a national environmental data strategy, and an action plan for implementing a workable system, in appropriate and cost-effective stages.

5. Environmental Overview of Potential Environmental Effects of Adopting a Jordan-U.S. Free Trade Agreement

5.1 Introduction

At this stage in the environmental review of the Jordan-U.S. Free Trade Agreement, it is extremely difficult to be very detailed or quantitatively precise about the likelihood of specific impacts on the environment. Not only are many of the terms of the FTA still under negotiation, but also the nature and the significance of future environmental impacts will be the cumulative result of numerous individual decisions to be made over a period of years by investors, industrialists, traders, government officials, and consumers—not only those residing or doing business in Jordan, but also from the U.S., and even businesspeople from third countries who may be attracted to become involved in businesses in Jordan in order to take advantage of the favorable trade rules between Jordan and the United Sates.

As a result, the approach taken in this document is a precautionary one, in which potential impact issues are identified, and possible impact reduction or avoidance measures are identified. The intent is to develop an early focus on likely problem areas, and to formulate response strategies that will allow appropriate steps to be taken in the future, if and when actual environmental problems do arise.

In assessing the potential environmental impacts in Jordan associated with the proposed FTA and other trade liberalization measures, attention will be given to:

- Changes in ***resource consumption levels*** due to increased activity in manufacturing, goods assembly, and the transport of finished goods. Principal resources likely to be consumed include water resources, energy resources, and various land resources, mineral resources, and other natural resources in Jordan, which may be mined or otherwise, exploited for commercial purposes.

- Changes in ***rates of residuals generation and methods of disposal***, by which is meant the liquid and gaseous emissions, and the solid wastes that pollute the environment, and which should be collected, transported, treated, and properly disposed of.

- ***Spatial distribution*** of environmental effects is also an important consideration, since a given change to the environment may take on greater or lesser significance depending on its location vis-à-vis sensitive receptors (such as important natural or cultural resources, dense residential areas, etc.) Many trade-related effects (such as the expansion or development of new manufacturing centers, large-scale production centers, warehouses, and transport and shipping facilities) will have definite spatial characteristics that must be considered.

- The significance of potential changes to the environment need to be assessed in terms of the ***sufficiency of the policy and institutional framework*** for environmental protection: how willing and able are government officials and business leaders to address potential environmental impacts? Are adequate legal and regulatory provisions in force? Are the necessary technical skills available? Do adequate funding sources exist?

- Finally, an Environmental management system including ***environmental impact assessments, environmental auditing, permitting procedures and SOPs monitoring and enforcement measures*** should be implemented of major new or expanded industrial projects and related infrastructure facilities. (Currently there is little or no legal requirement for environmental impact assessment of industrial activities in Jordan, as the necessary by-laws have never been ratified.) Based on the findings of environmental impact assessments, formal approvals to proceed with development of such facilities must be conditioned upon receipt of binding assurances that proper planning and design measures have been followed, and that agreed impact mitigation measures will be constructed and necessary equipment installed, and properly operated and maintained for the life of the project. Legislation is also needed to assure that failure to comply with agreed permit conditions will lead to substantial fines and, if not remedied, to suspension of permission to operate.

The above considerations will be applied to the following issue analysis, and taken into account in developing the recommendations presented in Section 7.0 of this document.

5.2 Water Resources Usage and Wastewater Treatment

Industries can be significant water users, particularly those involved in the processing of mineral resources and other raw materials. Because of Jordan's severe and chronic water scarcity, it will be important, as a matter of general public policy, to discourage the introduction or expansion of industries and/or industrial processes that consume large quantities of water. If such industries are allowed, their approval should be conditioned on the installation of the latest technologies for 'closed cycle' water use, involving treatment and reuse of treated wastewater in the production process. Such processes can greatly reduce water consumption, and also help to eliminate the discharge of polluted waters to local streams and aquifers.

However, only a few of the manufacturing industries and none of the service industries identified in Section 3.0 of this report as having potential for growth due to the FTA are heavy water consumers. These include such activities as light manufacturing and assembly, garment manufacturing, pharmaceuticals, IT (Information Technology) and other software development, and the like. Nevertheless, even these industries should be encouraged (through the use of economic and other incentives) to utilize efficient water conservation technologies and practices.

Another sector where potential FTA impacts on water use are unclear is the agricultural sector. In one respect, increased importation of agricultural and food products from the U.S. may reduce the demand for domestic agricultural products, thereby decreasing water usage in this heavily water-dependent sector. (Agriculture in Jordan accounts for 70% of current water usage, but its direct contribution to the National Economy is less than 10%.) The substitution of imported grain and food products for locally grown products would be even more probable if water-pricing policies in the agricultural sector were modified to more closely approximate actual production costs. At present, the provision of irrigation water at a price well below its production cost encourages the mis-use of this scarce resource. It may also contribute to the unsustainable utilization of marginal farmlands.

However, if proper pricing policies are adopted and a shift occurs in cropping pattern, Jordan might be able to export high value crops to the states in certain market windows.

On the other hand, if future trade trends and water policy shifts lead to a reduction of agricultural activity, it will be important to monitor the situation in order to minimize negative impacts on small farmers and farm workers. In time, the increase in job opportunities in manufacturing and service sectors will provide alternative (and higher paying) sources of employment for redundant farmers, while a restructuring of agricultural water use patterns could free up a substantial portion of the nation's water resources for use by more productive economic activities.

5.3 Air Quality

Economic activity due to increased trade can lead to additional air pollution, both from major point sources (power generating plants; cement factories, fertilizers, refineries; large-scale industrial parks, etc.) as well from increased highway transportation demands. In addition, higher living standards and cheaper automobiles can lead to a rapid increase in personal vehicular use and resulting air quality impacts, particularly in urban areas.

As in the case of water usage, all major new or expanded industrial facilities should be required to utilize "Best Available Technologies" (BAT) Air quality control equipment (scrubbers, precipitators, etc.) to control gaseous emissions as well as dust and other particulates. In many ways, the control of noxious air emissions by large point sources is relatively straightforward: appropriate control technologies exist, and the installation and operation of the equipment is relatively easy to monitor and enforce since a relatively small number of large sources are involved. The principal constraint is the cost of installing, operating, and maintaining the necessary equipment.

More difficult to control are smaller stationary sources, and all mobile sources such as trucks and automobiles. These sources are best dealt with by improving the quality of the fuel used (i.e., introduction of lead-free gasoline and low-sulfur fuel, coupled with the prohibition of or increase in price for the use of environmentally polluting fuels). Equally effective—but somewhat more difficult to set up and administer—are periodic vehicle inspection and maintenance programs. To be effective, vehicles that are found not meeting minimum emission standards must be repaired, or retired from use. The enforcement of such regulations can be very difficult, particularly in an economy where transport costs are already relatively high.

Finally, another source of urban air pollution is the burning of solid wastes. Such practices should be banned, except where well-controlled incinerators are used for solid waste disposal.

5.4 Solid and Hazardous Wastes

Increased trade activity is quite likely to be accompanied by increased generation of a variety of solid wastes. Solid wastes are especially problematic in the case of mineral and other natural resource exploitation industries. In particular, phosphate mine tailings have been identified as a major solid waste problem in Jordan, which, fortunately, generally occurs at some distance from heavily populated urban centers. Other large-scale natural resource-based industries have similar

problems, such as the cement industry the oil shale extraction industry and (should it prove to be economically feasible).

However, while most industries do not generate large quantities of solid waste, there is frequently a component of toxic or hazardous waste, which requires special handling for proper disposal. At present, Jordan does not have a properly designed and operated hazardous waste disposal site, nor is there a service industry in place that is capable of collecting and safely transporting hazardous waste materials from the point of production to a disposal facility. The need for such a disposal system is already present, and will only become more acute as the industrial economy grows.

As in the case of water and air pollution, technologies do exist to minimize the quantity of hazardous and toxic wastes, and to reprocess the wastes to produce recyclable by-products. These techniques should be required of all new or expanded industries. In addition, environmental audits can identify critical stages in a production process where wastes can be minimized or eliminated, either through the use of better production technologies, or by treating and reusing waste products in the production process. Investments in waste minimization equipment often pay for themselves in a relatively short period of time.

Increased consumption of packaged goods, and the disposal and replacement of obsolete products may increase the levels of household wastes. These wastes can be reduced by imposing packaging standards on consumer goods, and by requiring manufacturers and/or retail suppliers to accept and recycle or otherwise properly dispose of obsolete products that are returned by the consumer when their useful life is exhausted. Such programs, however, can add significantly to the cost of goods sold, and are difficult to enforce.

Municipal solid waste collection and disposal systems will also need attention. In most urban areas, solid waste collection is handled relatively well, but disposal sites are poorly managed. Burning of trash should be prohibited in order to reduce air quality impacts, disposal sites should be located on impermeable soils or artificially lined to reduce leachate and resulting groundwater pollution, and trash should be covered daily to reduce health impacts. Hazardous materials should be separated and sent to a proper hazardous waste disposal site for treatment and disposal. Recycling of household wastes should be encouraged, at least for those materials, which can be recycled or reused on an economically rational basis. In other countries, privatization of waste collection and disposal systems has proven to be an effective way to improve the quality and operating efficiency of municipal solid waste systems, and to encourage economically viable waste recycling programs.

5.5 Energy Resources Usage

Energy resources constitute one of Jordan's primary imports. Thus, any substantial increase in the nation's energy usage rates may adversely affect the balance of trade. Energy resources are needed in both the production and the transport phase of industrial activities, as well as for private transportation use.

Environmental audits focused on energy use can lead to significant savings in many industrial, commercial, and household situations. Energy audits are especially useful in industrial plants. As is the case with waste minimization studies, energy conservation investments can often pay for themselves in a relatively short time period, through savings in energy costs. From the national

perspective, energy efficiency will help control the need for imported energy resources, and support the development of a more productive and competitive economy. The use of renewable energy sources should also be exported given favorable climate conditions.

5.6 Marines, Coastal Zone, and Other Surface Water Resources

Increased marine transport through the Port of Aqaba is likely to have a negative impact on the fragile marine eco-system of the northern Red Sea, home to the world's northern-most coral reefs, as well as threatened populations of sea turtles, dolphins and other sea life.

Similarly, increased exploitation of natural resources in and near the Dead Sea is likely to further threaten this unique, fragile and poorly understood inland lake.

Several rivers along or near Jordan's international borders are critical sources of water supply. Any degradation of their quality will have severe social, economic, and political as well as environmental consequences.

In each case, new or expanded resource extraction, industrial production, and transportation facilities in or adjacent to these unique resources must be planned, constructed, and operated with the utmost care. In the Aqaba area, better shipping and loading practices should be put in force to reduce discharges of harmful substances to the coastal waters. MARPOL requirements should be strictly enforced, including the installation and use of pump-out facilities for sewage and bilge wastes. Improper disposal of wastes from ships must be prohibited, and landside pollution sources (whether air-borne or contained in storm run-off) must be contained. Emergency response procedures and equipment need to be in place to respond when required to avert an environmental catastrophe. Regional cooperation should be sought to protect the Dead Sea, as well as the Gulf of Aqaba/Northern Red Sea from all forms of environmental damage.

5-7 Land Use Planning and Adequacy of Supporting Infrastructure Facilities and Services

Major land use changes are not anticipated as a result of the FTA and resulting economic activity. However, at the local or site scale, better planning is needed to assure that industrial facilities and centers are provided with adequate infrastructure and services, and that nearby sensitive receptors are protected from environmental threats (such as air pollution and odors, noise, heavy traffic, discharge of toxic and hazardous substances, and the like.)

A manual on industrial site design should be prepared by an appropriate public agency to guide industrial site developers, and to provide a framework for preparing environmental impact assessments of new sites. Industrial land use development approvals should be conditioned upon assurances that proper planning and design measures have been followed, and that appropriate infrastructure and impact mitigation facilities will be installed and maintained. All proposed projects should demonstrate that they are not in conflict with any official land use plans or environmental protection/conservation plans that may have been issued for the land in question.

In same fashion, major improvements to infrastructure facilities that will serve industrial users need to be carefully studied in advance of approval. These would include all projects for new or expanded:

- Roads and ports (including highways, marine ports, and air cargo facilities at airports);
- Power generation plants and transmission facilities;
- Major wastewater treatment plants and solid waste disposal facilities;
- Water supply systems;
- Refineries, oil and gas pipelines, and fuel storage facilities.

5.8 Regional and Transboundary Effects

Because of its size and location, many environmental changes that occur in Jordan will also have effects outside its boundaries. As a responsible neighbor, and in response to the many international treaty obligations that Jordan has ascribed to (see Annex D), these impacts need to be carefully considered. Potential regional environmental impacts can be divided into two types: impacts resulting from increased Jordanian economic activity which affect ***shared resources*** (e.g. border regions, shared water sources, etc.), and those, which affect ***mobile environmental media*** (e.g. air pollution, pollution to marine waters, etc.)

A Jordan-U.S. FTA would make obsolete the current Qualified Industrial Zones (QIZs), such as the highly criticized Jordan Gateway QIZ planned to be constructed along the Jordanian-Israeli border. As such, an FTA could theoretically reduce pressure on this border region, both from construction as well as from transportation. Experience of other free trade agreements which had promised reduced border pressures, notably NAFTA, however, shows that instead of reducing pressure on borders, economic activity in these areas has in fact increased, and FTAs have simply led to overall increases in economic activity and environmental burdens. Such is likely to be the case with a Jordanian FTA, since

1) Israeli investment is still likely to continue to be channeled into Jordan to take advantage of lower labor costs (roughly 1/10th that of Israeli labor for manufacturing [1994]), and

2) The lack of a Mediterranean port for Jordan, and thus, the potential advantage of using Israeli and/or Palestinian ports. Such cooperation, of course, depends on such factors as details regarding rules of origin in the FTA, as well as on the state of Israeli-Jordanian-Palestinian trade, which currently suffers from serious non-tariff barriers, primarily those related to entering goods into Israel.

Regarding other Jordanian borders, there is a possibility that with a Jordan-U.S. FTA, Jordan could become a regional trade hub, especially as concerns Syria and Iraq. While the impact of a Jordan-U.S. agreement itself would probably be insufficient to bring about such a result in and of itself, together with Jordan's recent accession to the World Trade Organization (WTO), its recent initialing of an association agreement with the European Union, other internal economic reforms, and a renewed initiative to build economic ties with its neighbors, such a scenario needs to be considered. Jordan has recently begun to strengthen economic relations with Syria, including establishing joint

industrial free trade zones. In terms of the environmental impact, increased economic activity along borders means increased emissions into air and water sources, as well as impacts on open spaces and the natural habitats.

5.9 Technology and Management transfer

There is always a danger that an FTA between an industrial country such as the U.S. and a developing country, such as Jordan, could lead to the latter becoming a dumping ground for obsolete technologies from the former. This worry is magnified should Jordan indeed become a hub for regional trade (at least with Syria and Iraq), in which case, the FTA could facilitate the spread of old technologies throughout the region. Specific clauses within an FTA and/or a reformulated Jordan-U.S. investment agreement should be drafted to preclude such a scenario.

However, it is more likely that most international companies seeking to invest or do business in Jordan will seek to achieve a high level of technological and environmental performance

The reasons for this are several.

First, most major multinational corporations cannot afford to apply a double standard in the environmental field. If the receiving country (Jordan, in this case) does not reject such an approach, the investor is likely to find opposition in his own country from shareholders, environmental NGOs, and others.

Second, on the level of international competitiveness, companies which have achieved a reputation for quality production (as reflected by ISO and similar environmental quality certifications) cannot afford to produce inferior goods without risking their hard-earned certification status.

Finally, the transfer of state-of-the-art production and environmental control technologies and techniques to Jordan will be a function of the strictness of environmental regulatory standards. A higher level of environmental standards will encourage the faster adoption of the "Best Available Technologies" (BAT) provided, of course, those penalties for non-compliance are fairly applied and properly enforced. In the long run—and often in the short run—compliance with environmental requirements will prove to be less costly and the international marketing advantages of a "green" reputation will be more attractive than a policy of resistance and non-compliance with environmental requirements.

Finally, the growth of environmentally friendly, or 'green' service industries in Jordan can represent a significant new business opportunity for local businesspeople, as has been the case in Europe and North America. This new business sector would draw upon the professional resource capabilities in Jordanian universities and technical institutes.

6. Potential Environmental Effects of Not Adopting a Jordan-U.S. Free Trade Agreement

6.1 The Challenge Presented by the Proposed Free Trade Agreement

The Jordan-U.S. Free Trade Agreement presents an opportunity to be seized. The proposed FTA will bring about a significant but as yet undefined increase in the level of investment, economic development and trade between the two countries. This will generate new business opportunities for Jordanian investors and businesspeople, and provide new job opportunities for the coming generation of Jordanian workers. The FTA may also cause potential social, economic and environmental changes, as discussed in earlier Sections of this report. These changes need to be carefully and continuously monitored, and appropriate responses taken, in order to minimize any negative harm to Jordan and its people. Some of these safeguards and responses can be included in the FTA itself; others will make from time to time as problems emerge.

Failure to adopt the proposed FTA with the United States, however, will not avoid the changes and problems discussed above. These problems already exist, and some are severe. Many have been repeatedly identified and analyzed over the past decade, in documents such as the **National Environment Strategy** and the **National Environmental Action Plan**.

Moreover, failure to adopt the FTA will not reverse the process already underway of bringing Jordan into a widening international marketplace. The trade liberalization measures associated with WTO membership, with the free trade arrangements with Arab and European neighbors, and with the QIZ activity with Israeli and Palestinian participation have already put Jordan on the course of increased participation in the global economy.

The Jordan-U.S. FTA is but one more element—albeit a major one—in this progression.

6.2 Not Adopting the FTA Would Amount to An Opportunity Missed

The economic benefits produced by the FTA can be utilized, in part, to counter the negative environmental effects of the agreement. Both the public sector and the private sector need to be mobilized to achieve this end. In the absence of the free trade agreement, there will be fewer economic resources available to invest in the construction and equipping of more efficient and productive manufacturing plants, and in improved pollution control equipment. There will be fewer incentives available to train environmental management specialists in the private sector and to develop capable environmental protection programs and staff in the public sector.

In summary, the FTA is not the only force operating to transform the Jordanian economy. But it is one potentially major vehicle to help bring Jordan into the 21st century, and a new era of international economic competitiveness.

Jordan aspires to be internationally competitive in a variety of manufacturing sectors, and in Hi Tech fields such as Information Technology, medical care and pharmaceuticals. To do so, it must demonstrate that the Jordanian business economy can consistently produce goods and services of high quality, which satisfy internationally recognized standards of performance, such as those embodied in ISO 9000 and 14000 series.

7. Recommendations for Action to Protect Environment Quality

This section of the FTA Environmental Review report compiles and restates—in the form of a series of ***recommendations for action***—many of the key findings of the environmental review research team, and the suggestions of interested stakeholders. The recommended environmental programs and initiatives are designed to help support the sustainable growth of Jordan's economy following adoption of the FTA and other trade liberalization initiatives.

These recommendations will thus be useful in negotiating the final FTA language, in the development of a trade liberalization "environmental action plan" for implementation by Jordan (with possible U.S. and other donor assistance) in coming months and years, and/or in the future review and evaluation of FTA impacts on the environment.

7.1 Institutional Change and Strengthening

7.1.1 Create a Ministry of Environment. The keystone of the recommended actions addresses the need for institutional change and strengthening of Jordan's environmental protection regime and, in particular, the creation of a Ministry of Environment. This proposal, which has also been given official status in the Letter of Designation to Prime Minister Ali Abu al Ragheb, was strongly supported by various participants at the FTA Public Consultation session. While the new Ministry should assume primary responsibility for environmental programs, other Ministries and agencies would retain at least a portion of their existing environmental units, for internal operational purposes, and as a point of coordination with the new Ministry.

The Ministry of Environment would serve as a central locus for:

- National environmental strategy and program development,
- National environmental policy making,
- Development and promulgation of environmental regulations, by-laws, and emissions and other standards,
- An Environmental Inspectorate, with responsibility for monitoring and enforcing emissions and other standards,
- Development of environmental quality indicators, and related environmental data collection and analysis,
- Environmental impact assessment reviews and approvals (including binding environmental conditions),
- Management of national parks and conservation areas, including marine protectorates,
- Public awareness activities in the environment sector, and
- Coordination of the environmental activities of other agencies.

7.1.2 Establish a Continuing Process and a Forum for the Review of FTA and other Trade Liberalization Impacts. Testimony received at the Public Consultation session expressed concern over the current lack of certainty regarding the nature and severity of social, economic and environmental effects of implementing the FTA (and other trade liberalization measures.) A

continuing process of review will help to monitor changes that occur, and facilitate a public discussion and debate about appropriate responses. Such a process should be coordinated by the new Ministry of Environment, and involve other stakeholders in the public, private, NGO, and academic communities. All aspects of change should be considered. Some of the core issues raised by stakeholders that will require further scrutiny include:

- Potentials for increased water and energy consumption,
- Degradation of Jordan's natural and cultural resources due to the development of new industrial and transportation facilities,
- Length of time required to bring Jordanian industries up to international standards of environmental performance,
- Costs of attaining international environmental performance levels,
- Inability of existing environmental laws and institutions to deal with rapid economic development,
- Potential for regional or transboundary impacts that would require consultation with Jordan's immediate neighbors and trading partners, including Egypt, Saudi Arabia, Israel, Palestine, Syria, etc.,
- Protection of worker's rights, including retraining of redundant workers, and prohibition of child labor,
- Potential changes on traditional life styles in Jordan due to changes in economic activities (especially in the agriculture sector) and in the encouragement of a consumer-oriented society, including the importation of goods at odds with Islamic tradition.

7.2 Considerations for Inclusion in the Free Trade Agreement

Some of these key issues can be addressed in the Free Trade Agreement itself, or in 'side agreements' that may be negotiated between the signatories. Specific areas, which could be addressed during the final stage of negotiations, include:

- Review of environmentally detrimental trade or trade-support policies (e.g. specific subsidies, NTBs, or non-trade barriers, etc.) and specific encouragement of trade-support policies that facilitate the introduction of environmentally friendly technologies and services (wastewater treatment systems, waste disposal & recycling facilities, sustainable energy systems, environmental management services, organic agriculture, etc.),
- Support for the implementation of specific environmental and other infrastructure projects which will be required in order to minimize adverse environmental impacts,
- Support for environmentally desirable trade, such as that dealing in organic agriculture, certified goods, etc.;
- Financial support for access to environmental technologies and performance certifications for small and medium sized enterprises in Jordan, which constitute over 90% of all businesses, and are largely unable to afford initial outlays for such technologies,
- Provisions to avoid the relocation of polluting industries to Jordan in order to take advantage of lax and weakly enforced regulations,
- Explicit prohibition on the possible import into Jordan of some environmentally noxious goods (i.e. illegal pesticides, the potential infiltration of invasive species, and trade in endangered species),

- Prohibition against the export to one country of goods prohibited to be used in the second country,
- Agreement that information on trade in hazardous goods (including quantities, sources, and trade routes) should be documented, and made available to the public upon request,
- Requirement for holding periodic, bilateral reviews of the environmental impacts of the FTA, and allowing for appropriate alteration of the agreement, should significant negative impacts be found?

In addition, in order to avoid a technology dumping ground situation, the Jordan-U.S. investment agreement and the FTA should specifically oblige major U.S. trade and investment in Jordan to utilize best-available production and pollution control technologies. Criteria for deciding what types of trade and investment would be subject to this requirement, as well as what constitutes BAT could be decided by a joint Jordanian-U.S. economic forum, to which governmental, private sector and environmental specialists should be party. In order that the FTA not lead to a lowering of environmental standards, specific clauses should be drafted which specify that the FTA should not be seen as limiting either country's right to initiate or maintain regulation for purposes of protection of the environment, health or safety. Explicit mention of respect for the "Precautionary Principle" should also be made in the preamble to the agreement.

7.3 Capacity Building and Training

Capacity building and training will be a basic need for a newly established Ministry of Environment, to enable its staff to properly exercise their responsibilities. Assistance will be needed in all aspects of professional skills development, and assistance will be sought from the full range of international donors. Some of the key areas to be addressed include:

- Improve Environmental Impact Assessments (EIA) skills. EIAs should be mandatory for all major investments in manufacturing sites and facilities, and trade-related infrastructure facilities. Information generated by EIAs should be used to devise specific project design and management conditions for inclusion in project construction and operations approvals. As Jordan's current legal and regulatory system is insufficient to conduct and then to monitor follow up of EIAs, specific training and capacity building efforts in these spheres would be in order.

- Improve analytical skills in environmental economics, in support of environmental policy making in Jordan, including the development of economic instruments to encourage environmental compliance. The integration of basic economic and environmental principles in the formulation of sustainable development policies should be encouraged, through the use of environmental indicators and environmental national accounts in economic analysis. Classical economic growth models do not take into consideration the exploitation of natural resources (water, soil) in national economic evaluation and analysis. This leads to an inefficient and unsustainable use of natural resources.

- Create a national Task Force on environmental data collection and management, representing all key stakeholders and staffed by skilled professionals. The Task Force should be charged with developing a national environmental data strategy, and an action plan for implementing a workable system, in appropriate and cost-effective stages. Components of the system should

address the need to devise environmental indicators that can provide data required for policy making, for project planning, and for compliance monitoring. These data can also be used to publish an annual "State of the Environment" report for Jordan.

7.4 Technical Assistance and Demonstration Projects

In parallel with capacity building and training, the Ministry of Environment will seek donor support for technical assistance through targeted demonstration projects. Potential demonstration projects in the field of trade and environment would include:

- Demonstrate BAT (best available technology) for pollution control, waste minimization, environmental audits, energy conservation, water conservation etc., in various industrial contexts,
- Develop and apply national EIA guidelines to new, trade-related investment projects,
- Thoroughly investigate the added pressure on natural resources from new development of operational facilities and production process units, including potential pollution burdens discharged by such expansion,
- Conduct a study of recently developed industrial parks, QIZs, special economic development zones, etc., to determine their adequacy vis-à-vis environmental infrastructure, transport facilities, etc.
- Develop technical guidelines for the identification and planning of optimum sites for new manufacturing activity, and related infrastructure facilities, and to protect such sites from premature or incompatible development,
- Develop environmental audit programs in cooperation with selected industries,
- Prepare and test emergency preparedness/emergency response programs for dealing with catastrophic environmental emergencies,
- Assist new business development and encourage technology transfer with respect to pollution control and waste minimization programs.

7.5 Self Regulation of Environmental Performance by the Private Sector and NGOs

Increasingly throughout the world, reliance is being placed on private businesses to monitor pollution discharges and to file certified results of their findings. This principle of corporate environmental management and voluntary self-regulation allows limited public resources to go much further than is possible if all inspections and monitoring of emissions discharges is performed by government agencies. Public control over such a system can be assured by the specification of testing equipment and procedures to be used, the analytical tests to be performed, and through random, unannounced field audits of the reported findings. Towards this end, the Ministry of Environment should:

- Work with private industries and industry groups to encourage the adoption of self-regulatory environmental management approaches, such as ISO 14000 certification, environmental audits programs, eco-labelling, etc.,
- Provide assistance and support to environmental NGOs,
- Develop mechanisms to enable NGOs and individual citizens to give notice of possible environmental violations, and even to seek administrative and judicial redress for environmental damage.

8. Public Consultation Process

8.1 Public Notices and Other Supporting Materials

An opportunity was provided for public comment on the environmental aspects of the Jordan-U.S. Free Trade Agreement, as announced by a Notice published in leading Arabic and English newspapers. This Notice appeared on July 10th and 12th, 2000, in the Jordan Times. A copy of the Notice is presented in Annex B.

A Public Consultation Meeting was subsequently held on July 13, 2000, in the auditorium of the National Electric Power Corporation. Dr. Mohamed Halaiqa, Deputy Prime Minister, chaired the Meeting. More than 100 individuals attended, representing Jordanian businesses, business organizations, banks, universities, government agencies, and environmental NGOs. A copy of the invitation letter for the public meeting, the Agenda, copies of handouts and presentations made at the meeting, and a list of attendees are included in Annex B.

8.2 Summary and Assessment of Information Exchanged Through the Public Consultation Process

A number of comments were received as a result of the publication of the Notice of an opportunity to comment, and further oral and written comments were received from the persons attending the Public Consultation Meeting. These responses are summarized below. In addition, copies of all written comments received (whether by mail, email or fax) will be retained by the Negotiating Team, and will be available for review upon special request.

Given the relatively short period of time allowed for participating in this initial comment and response period, it is expected that additional comments may be submitted in the coming weeks. Although these comments will not be summarized in this document, the Negotiating Team will review them and pertinent information will be released to the public in the future, as warranted.

8.2.1 Response to the Notices Published in the Press

All responses are integrated in the report of Results and Analysis of Questionnaires with tables representing the data entered in the Environmental Response Forms in Annex C.

8.2.2 Testimony and Responses Received at the Public Consultation Meeting

Analysis of Responses and Comments represents all the responses from e-mails , faxes, and letters after the public meeting are available in Annex C.

8.3 Future Consultation Activities

The opportunity to participate in a meaningful way in the review of possible environmental and other impacts of the FTA was highly appreciated by the persons attending the consultation meeting and/or submitting written comments in response to the newspaper advertisements.

In part due to this very positive response, and in part due to a firm belief that transparency will help mobilize support for dual goals of increased trade liberalization and improved environmental protection, it is intended that public consultation activities dealing with the environmental consequences of the Jordan-U.S. FTA will continue during the negotiation and ratification period, and beyond into the implementation period, as environmental effects are actually experienced in Jordan and the adjoining region.

Although the precise nature and timing of these activities have not yet been determined, the Jordanian Government is committed to maintaining a spirit of transparency and cooperation in order to assure full consideration and response to the environmental changes that occur as a result of trade liberalization programs such as the Jordan-U.S. Free Trade Agreement.

9. Annexes

Annex A Bibliography

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Annex B Public Consultation Process Documents

- Annex B-1 Newspaper advertisement
- Annex B-2 Letter of Invitation
- Annex B-3 Attachment with the invitation letter
- Annex B-4 Meeting Agendas
- Annex B-5 Environmental Response Forms
- Annex B-6 List of Attendees

Annex B-1 Newspaper advertisement

NOTICE OF OPPORTUNITY TO COMMENT ON THE ENVIRONMENTAL CONSIDERATIONS OF THE PROPOSED JORDAN-U.S. FREE TRADE AGREEMENT

Jordan has commenced negotiations with the United States on a potential Free Trade Agreement (FTA) between the two nations. Given the anticipated economic benefits deriving from such an agreement, both Jordan and the United States are committed to concluding an agreement as expeditiously as possible.

Environmental issues and concerns are of high priority to the Jordanian institutions. Jordan's Environmental Law No. 12 of 1995 requires that environmental considerations be taken into account when undertaking economic development activities within the country. This in turn implies that the environmental dimension should figure into discussions about the potential FTA with the Unites States. These environmental concerns figured early in the discussions with senior U.S. officials regarding the scope of the FTA. They continue to play a significant role in the ongoing negotiation meetings, both in Jordan and in the U.S., including most recently a meeting of the FTA environmental working group that convened in Washington on June 30, 2000.

Most recently and under U.S. Executive Order 13141, dated 14 November 1999, all trade agreements involving the United States must involve a careful assessment and consideration of possible environmental effects. Among other things, the Executive Order notes that "trade agreements should contribute to the broader goal of sustainable development." It further states that the United States will incorporate environmental considerations into the development of its trade negotiating objectives.

In support of the Jordan FTA negotiating team, a review of environmental considerations related to the FTA is being developed, in consultation with numerous interested parties and stakeholders in Jordan. This review is not intended to be a final step, but rather an initial step in a continuing process of environmental impact identification and evaluation. In the short term, recommendations resulting from the review process will help shape the final terms of the FTA. In the long term, as experience is gained with the FTA in coming months and years, the environmental review will be refined and extended, and further recommendations developed to address specific issues that may emerge.

The environmental review will:

- analyze key legal and institutional dimensions related to Jordan's natural and cultural environment;
- identify stakeholders in the public, private and NGO sectors;
- summarize the likely economic outcomes of an FTA on Jordan; and

- assess corresponding environmental concerns in order to help inform the FTA negotiation process.

The contents of the environmental review will include:

Part One: Survey of Existing Conditions and Documentation
Part Two: Written Assessment and Recommendation s on Environmental Considerations Related to the Potential Jordan-U.S. Free Trade Agreement
Part Three: Summary of Public Comments Received

The Jordanian negotiating team is soliciting your comments and suggestions on the above to be incorporated in the environmental review. Your comments and suggestions should be received by July 16, 2000, however, comments received after July 16 will be useful for refinement work at later stages. Please send your comments and suggestions to any of the following addresses:

E-mail: enviro2000@globalone.com.jo

Fax: 06 5603599

Post: FTA Comment
P.O. Box 941400
Amman 11194

Dr. Mohammed Halaiqa
Deputy Prime Minister
State Minister for Economic Affairs
Head of the Jordanian Negotiating Team on FTA

Annex B-2 Letter of Invitation

9 July 2000

Dear _____:

As you are probably aware, the Government of Jordan is engaged in negotiations with the Government of the United States concerning a prospective Free Trade Agreement (FTA) between the two countries. If successful, Jordan will be the first country in the Arab world to be a member of the World Trade Organization and to have signed an agreement of this type with the United States. We are confident that such an agreement will have a highly positive impact on the Jordanian economy, resulting in more jobs, higher incomes, and increased trade and investment.

Both the Jordanian and the U.S. negotiating teams are firmly committed to ensuring that environmental considerations are taken into account and effectively addressed as part of the final agreement. As part of that process, the Government of Jordan is undertaking an environmental review that assesses the possible effects of the FTA on the Jordanian environment. It will also analyze the existing institutional and legal framework for addressing environmental issues in Jordan and, hopefully, recommend ways to respond to any issues that may arise. It is important that members of the Jordanian public, including leading business associations and non-governmental organizations involved in environmental issues, have an opportunity to offer comment and provide input.

The purpose of this letter is to request your input and comments in two ways. First, I am enclosing a summary of the scope of the environmental review, which is now underway. We welcome your comments on any areas of this review. Your comments may be submitted by email (enviro2000@globalone.com.jo); by fax (06-560-3599); by post (P.O. Box _____, Amman); or by hand delivery at the information meeting discussed below.

Second, I wish to invite you to attend a public information meeting which will be held on Thursday, July 13th, between 5:00 and 7:00 PM, at the _____ in Amman. Please call _____ to RSVP and confirm who from your organization will plan to attend this meeting.

Please note that your comments will have maximum utility to this environmental review process if they are submitted on or before the 16th of July. This will allow them to be reviewed prior to the next round of negotiations, scheduled for late July. However, comments submitted after this date will still be most welcome and instructive.

Thank you in advance for your interest tin this important process. While realizing that the environmental review study needed to help inform the FTA negotiations must be prepared very quickly, we do sincerely welcome your comments and assure you that they will be important to our continuing efforts to identify and evaluate the environmental effects of the Jordan-U.S. Free Trade Agreement.

Sincerely,

Dr. Mohammed Halaiqa

Deputy Prime Minister and State Minister

For Economic Affairs

Annex B-3 Attachment with the invitation letter

SUMMARY DRAFT DESCRIPTION FOR BACKGROUND STUDY ON ENVIRONMENTAL IMPACT OF JORDAN-U.S. FREE TRADE AGREEMENT (FTA)

Jordan has commenced negotiations with the United States on a potential Free Trade Agreement (FTA) between the two countries. Given the anticipated economic benefits deriving from such an agreement, both Jordan and the United States are committed to concluding an agreement as expeditiously as possible.

Under the American Presidential Executive Order 13141 dated 14 November 1999, trade agreements involving the United States must involve a careful assessment and consideration of possible environmental impacts. Among other things, the Executive Order notes that "trade agreements should contribute to the broader goal of sustainable development." It further states that the United States will factor environmental considerations into the development of its trade negotiating objectives. The Executive Order also offers some broad advice as far as the environmental aspects

Similarly, Jordan Environmental Law No. 12 of 1995 requires that environmental considerations be taken into account when undertaking economic development activities within the country. This in turn implies that the environmental dimension should figure into discussions about the potential FTA involving the United States. These concerns figured early in the discussions with senior U.S. officials regarding a prospective FTA. They also continue to play a significant role in ongoing meetings in both the United States and in Jordan, including most recently a meeting of the FTA environmental working group that convened in Washington in late June 2000.

A substantial body of written background material is already available that speaks to many of the environmental issues likely to emerge as the result of an FTA between Jordan and the United States. These include an environmental action plan for the Gulf of Aqaba; the environmental assessment prepared in anticipation of the prospective Aqaba Special Economic Zone (SEZ); a profile of the environmental business sector in Jordan; and various briefing materials related to trade agreements involving Jordan. Among other things, these and related documents highlight major features of the environmental legal and administrative regime in Jordan. They also point to issues and concerns that need to be addressed, especially in the context of future trade and investment activity in both Jordan and the region.

While this material is both useful and timely, it is essential that a stand-alone technical document also be prepared and vetted with the broader Jordanian environmental community. Among other things, that document needs to specifically analyze key legal and institutional dimensions related to Jordan's natural environment; identify important players in both the governmental and non-governmental sector that are involved in environmental issues; summarize the likely economic outcome of an FTA on Jordan; and assess corresponding environmental concerns in order to help inform the FTA negotiation process.

As part of this process, the Government of Jordan is commissioning a review document that will likely include a background section; an environmental overview section; an analysis of the effects of a prospective FTA on Jordan section; a conclusions and recommendation section; and annexes and supplementary material. Solicitation of public comment, including input from leading environmental

organizations and business associations in Jordan, is an important part of the overall drafting process.

Annex B-4 Meeting Agendas

Agenda	
Public Information Meeting **to Discuss Environmental Issues Raised by** **the Proposed Jordan-U.S. Free Trade Agreement** Convened by the Office of the Deputy Prime Minister (Electricity Authority Hall / 7th Circle) Thursday, 13 July 2000 5:00 PM—6:30 PM	
1. Welcome and Introductory Remarks	H.E. Mr. Mohammed Halaiqa, Deputy Prime Minister
2. Scope and Purpose of the Environmental Review	H.E. Dr. Alia Hatough Bouran, Member of the FTA Negotiation Team
3. Presentation of Environmental Overview	Mr. Raed Daoud, EnviroConsult Office
4. Submission of Written and Oral Comments by Meeting Participants	Limited to 5 minutes per person; additional material can be submitted in written form, by email or post
Coffee Break	

Annex B-5 Environmental Response Forms

Environmental Response Forms

In addition to any oral or written comments, which you or your organization intend to provide to the Jordanian Negotiating Team on FTA regarding the proposed Jordan - US Free Trade Agreement (FTA), we invite your response to the attached response forms.

The three response forms present some of the environmental objectives of the FTA as well as some of the practices and principles, which might be employed to achieve these objectives. You are requested to rank them by degree of importance or priority, as evaluated by you or your organization. A blank sheet has been included for writing any additional comments or clarifications you may wish to add.

Please leave the completed forms in the box provided before leaving the Information Meeting this evening, or return them by fax on the following number (06 - 560 35 99), or by post (P. O. Box 941400, Amman 11194) at your earliest convenience.

Thank you for your interest and cooperation.

THIS RESPONSE FORM IS SUBMITTED BY:

NAME (OPTIONAL - YOU MAY SUBMIT AN ANONYMOUS RESPONSE):

ORGANIZATION / AFFILIATION:

MAILING ADDRESS:

TELEPHONE:

E-MAIL ADDRESS:

PLEASE CONTACT ME IN THE FUTURE REGARDING ACTIVITIES ASSOCIATED WITH THE REVIEW OF ISSUES INVOLVING THE JORDAN - US FREE TRADE AGREEMENT:

YES _____ NO _____

Continued..

Environmental Objectives of the Jordan - US Free Trade Agreement					
5 = Most Important, 3 = Somewhat Important, and 1 = Least Important	**5**	**4**	**3**	**2**	**1**
Proposed Objectives					
1. *Sustainability:* encourage the sound development and sustainable growth of Jordan's economy through the realization of mutually supportive trade, investment, and environmental management programs					
2. *Remove Barriers:* reduce or eliminate customs duties, production subsidies and other policy inefficiencies that create trade distortions and trade barriers, which can cause or exacerbate environmental problems					
3. *Technical Capacity:* strengthen the capacity of environmental managers in both the public and private sectors to respond to trade- and investment-related management challenges					
4. *Pollution Control:* introduce effective pollution prevention and waste minimization policies and practices throughout the private industrial sector					
5. *Compliance:* assure compliance with, and enforcement of, Jordan's environmental laws and regulations, and adherence to international environmental treaty obligations					
6. *Voluntary Compliance:* encourage greater private sector responsibility for environmental compliance through ISO 14000 certifications, internal environmental audits, and similar mechanisms					
7. *Participation:* promote transparency and broad public participation in the development of environmental policies and the implementation of environmental programs and projects					
8. *Performance Monitoring:* provide a mechanism for periodic monitoring of, and bilateral response to, trade-related environmental issues					

Your Suggestions:					

..continued..

Environmental Principles & Practices to be Incorporated into the Jordan - US Free Trade Agreement					
5 = Most Important, 3 = Somewhat Important, and 1 = Least Important	**5**	**4**	**3**	**2**	**1**
Proposed Environmental Commitments to be Made by Each Party					
1. *Performance reporting:* conduct environmental monitoring, and periodically prepare a report on *Trade, Investment, and the Environment*, as affected by implementation of the Jordan - US Free Trade Agreement					
2. *Legal/institutional improvements:* based on the above findings, revise environmental laws and regulations, & streamline environmental procedures in order to improve environmental performance and resource protection					
3. *Economic instruments:* promote the use of economic instruments for achieving environment goals: adopt the "polluter pays" principle					
4. *Impact reviews:* conduct environmental impact assessments for major new industrial development projects, and other significant trade-related activities					
5. *Enforcement:* develop effective, fair, and transparent enforcement procedures, which maximize private sector and NGO participation in addition to governmental interventions					
6. *Self-management:* encourage and support the implementation of environmental self-management programs by private industries					
7. *Emergency planning:* develop and test environmental emergency preparedness and emergency response measures, with particular attention to environmentally sensitive areas (such as marine & coastal habitats, tourism sites, urban residential communities, etc.)					
8. *Continuing dialogue:* conduct periodic bilateral workshops to identify and recommend appropriate responses to any unacceptable environmental consequences of the Jordan - US Free Trade Agreement					

Your Suggestions:					
5 = Most Important, 3 = Somewhat Important, and 1 = Least Important	**5**	**4**	**3**	**2**	**1**
Impacts of trade agreements. Such impacts can be either positive or negative. Please indicate which issues—in your opinion—are most likely to result from the Jordan - US Free Trade Agreement.					
1st. *Demand for raw materials and other production process inputs:* Impacts due to an overall increase in economic activity, and resulting in shifts (usually increases) in the demand for raw materials inputs to the production process. In Jordan, due to implementation of the FTA, what environmental parameters are most likely to be affected by such shifts?					
• Water resources and water use demands					
• Water and wastewater quality					
• Air quality					
• Energy demands (electricity and fuels)					
• Generation and disposal of solid wastes					
• Generation and disposal of toxic/hazardous wastes					
• Land use changes					
• Important natural resources (marine, coastal and/or terrestrial)					
• Important cultural resources, including tourism resources					
• Other environmental resources (please identify here, or on the attachment sheet)					

…continued:.

Typology of Potential Environmental Impacts					
5 = Most Important, 3 = Somewhat Important, and 1 = Least Important	**5**	**4**	**3**	**2**	**1**
Impacts of trade agreements. Such impacts can be either positive or negative. Please indicate which issues—in your opinion—are most likely to result from the Jordan – US Free Trade Agreement.					
2nd. *Development, expansion and / or modernization of production sites:* Increased economic activity due to expanding trade and investment will create demand for more manufacturing, assembly, and warehousing facilities. In Jordan, due to implementation of the FTA, what environmental parameters are most likely to be affected by development of such facilities?					
• Water resources and water use demands					
• Water and wastewater quality					
• Air quality					
• Energy demands (electricity and fuels)					
• Generation and disposal of solid wastes					
• Generation and disposal of toxic/hazardous waste					
• Land use changes					
• Important natural resources (marine, coastal and/or terrestrial)					
• Important cultural resources, including tourism resources					
• Other environmental resources (please identify here, or on the attachment sheet)					

…Continued:

Typology of Potential Environmental Impacts					
5 = Most Important, 3 = Somewhat Important, and 1 = Least Important	**5**	**4**	**3**	**2**	**1**
Impacts of trade agreements. Such impacts can be either positive or negative. Please indicate which issues—in your opinion—are most likely to result from the Jordan - US Free Trade Agreement.					
3rd. *Development, expansion and/or modernization of transportation facilities:* Increased economic activity due to expanding trade and investment will also require improved transportation facilities, both in-country (to move raw materials to manufacturing sites, and to move completed goods to/from air and seaports) as well as internationally. In Jordan, due to implementation of the FTA, what environmental parameters are most likely to be affected by development of such transportation facilities?					
• Water resources and water use demands					
• Water and wastewater quality					
• Air quality					
• Energy demands (electricity and fuels)					
• Generation and disposal of solid wastes					
• Generation and disposal of toxic/hazardous wastes					
• Land use changes					
• Important natural resources (marine, coastal and/or terrestrial)					
• Important cultural resources, including tourism resources					
• Trans-boundary and regional effects					

• Other environmental resources (please identify here, or on the attachment sheet)					

PLEASE USE THIS SHEET TO ADD ANY ADDITIONAL COMMENTS OR CLARIFICATIONS TO YOUR RESPONSE

Annex B-6 List of Attendees

33.	Mr. Issa Dallal	Jordan Petroleum Refinery Company	Manager	05-381-1211	

No.	Name	Organization	Position	Tel.	Fax.
1.	Dr. Esam Shannag	Yarmouk University		02-727-1100	02-724-7983
2.	Eng. Mohammed Al Abady	Ministry of Health		06-566-6147	
3.	Eng. Munqeth Mehyar	Jordan Royal Ecological Diving Society		06-586-6602	06-586-6604
4.	Mr. Kareem Qawar				
5.	Dr. Alia Hatough Bouran	Ministry of Tourism			
6.	Mr. Haidar Mourad	Chamber of Commerce			
7.	H.E. Dr. Mohammed Halaikeh	Deputy Prime Minister	Deputy Prime Minister		
8.	Mr. Shadi Mallkawi	Jordan News Agency	Journalist	06-464-4455	
9.	Ms. Lina Jaser	National Ecology and Wild Life Sociology		06-560-4364	
10.	Mr. Nawaf Obeidat	Electricity Distribution Company	Managing Director	06-516-3414	06-516-3412
11.	H.E. Mr. Hamdi Al Taba'a	Jordan Business Association	Chairman	06-562-2220	
12.	Mr. Abdel Rahman Sultan	Friends of Earth Middle East		06-586-6602	05-6-586-6604
13.	Mr. Bilal Al Bashir	Aqaba Regional Authority	Project Manager	03-201-9705	03-201-5600
14.	Mr. Mahmoud Al Omary	Jordan Environment Society	Executive Manager	06-569-9844	06-569-5858
15.	Mr. Amer Al Homoud	Aqaba Regional Authority		03-201-4207	03-201-5600
16.	Mr. Mohammed Azzam	Nation Electrical Power Company	General Manager	06-585-8615	
17.	Mr. Hussein Dabbas	Jordan Investment Board	Deputy Director	06-553-1081	
18.	Mr. Main Hiyari	Natural Resources Authority	Director General	06-581-1808	06-581-1306
19.	Dr. Walid Shawaqfeh	University of Jordan	Professor Assistant	06-523-0143	
20.	Mr. Mohammed Al Nsour	Friends of Environment		06-551-4430	06-551-4431
21.	Dr. Elias Salameh	University of Jordan	Professor	06-535-5000	06-534-8932
22.	Mr. Maged Zakaria	Ministry of Agriculture		06-568-6151	
23.	Mr. Nawaf Daoud	Water Authority of Jordan	Senior Advisor	06-568-0100	
24.	Mr. Ahmad Hidawi	Ministry of Industry		06-560-7647	06-560-7647
25.	Mr. Khalid Dajani	Citibank	Relationship Manager	06-464-4065	
26.	Mr. Mohammed Omari	Jordan News Agency	Journalist	06-464-4455	
27.	Dr. Mohammad Shatanawi	University of Jordan		06-535-5000	06-535-5577
28.	Mr. Abdullah Ahmad	USAID	Mission Env. Officer	06-592-0101	06-592-0143
29.	Mr. Othman Bdeir	Amman Chamber of Industry		06-581-7195	
34.	Dr. Manar Fayyad	University of Jordan	Director	06-535-5000	
35.	Ms. Sonia Rustom	Ministry of Labor	Legal Advisor	06-569-8186	06-566-7193

36.	Ms. Shouruq Hamarneh	Ministry of Health-Enviro. Health Dept.		06-568-5397	06-566-6147
No.	**Name**	**Organization**	**Position**	**Tel.**	**Fax.**
37.	Mr. Ibrahim Danoun	Arab Bank	Finan. Res.& Plan.	06-560-3142	
38.	Dr. Mohammed Hamdan	University of Jordan	Professor	06-535-5000 06-516-1953	
39.	Mr. Wa'el Abu Al Sha'ar	Queen Rania Center/JUST	Director	02-709-5111 ext. 22393	02-709-5044
40.	Mr. Issa Marto	Nuqul Group		06-495-2688	
41.	Mr. Michael Al Saeigh	Jordan Export Association		06-416-2482	
42.	Mr. Saeed Aloush	Royal Scientific Society			
43.	Mr. Raouf Dabbas	Friends of Environment		06-553—9601	06-553-6966
44.	Mr. Anees Muasher			06-553-6662	
45.	Mr. Hassan Al-Ostta	Jordan Hashemite Fund for Human Development	Managing Director	06-52-5241	06-582-7350
46.	Dr. Abdel Kareem	Mouta University			
47.	Ms. Leen Fakhoury	Friends of Archaeology	President	06-593-0682	06-593-0682
48.	Mr. Khalid Al-Earani	Royal Society for the Conservation of Nature	Managing Director	06-535-9089	06-534-7411
49.	Mr. Nidal Eses	Nuqul Group	Operation Director	06-465-2688	06-464-5669
50.	Mr. Essam Faqir	General Corporation for Environmental Protection	Financial Manager	06-535-0791	06-535-0084
51.	Mr. Yaseen Al Zu'bi	Jordanian Society for Desertification Control & Badia Development		06-565-1081	06-565-1082
52.	H.E. Mr. Avedis Serpekian	Jordan Valley Authority	Secretary General	06-568-9517	06-568-9916
53.	Mr. Mustafa Abu Libdeh				
54.	Mr. Bassam Hayek	Royal Scientific Society	Director/Research Ctr.	06-534-4701	06-534-4806
55.	Mr. Bassam Saket	Jordan Securities Commission	Chairman		
56.	Ms. Wijdan Saket	Business professional Women Club	Chairperson	06-551-1647	06-553-0092
57.	Mr. Rashed Al Tineh	Central Electricity Generating Company	Director General	06-585-5459	
58.	Ms. Nadia Juhari	Ministry of Planning	Senior Env. Planner	06-464-4466	
59.	Mr. Basel Karasnea	Aqaba Ports Corporation	Head Marine Inspector	03-585-5459	
60.	Mr. Yanal Abeda	Amman Chamber of Industry	Head of Env. Dept.	06-464-3001	06-464-7852
61.	Mr. Farouq Al Hiyari	Ministry of Energy	Industrial Dept.	06-586-3326	
62.	Dr. A. Abu Hassan	Jordan Phosphate Mining Co.	D. M. Director	06-589-5156	
63.	Ms. Fadia Al Husseini	Enviroconsult Office	Researcher	06-569-9769	06-569-7264
64.	Mr. Ibrahim Al Khader	IUCN	Program Coordinator	06-593-1445	
65.	Ms. Ruba Auban	Jordan Environment Society	Project Coordinator		
66.	Mr. Main Al Srideh	Jordan TV		06-470-1501	

67.	Dr. Amal Hijazi	USAID/WRE	Project Manager	06-592-0101 ext. 2134	
68.	Ms. Hind Abdel Jaber	Jordan Development Center	Jordan president	06-553-4250	06-553-6714

No.	Name	Organization	Position	Tel.	Fax.
69.	Mr. Ali Abandah	Jordanian Society for Desertification Control & Badia Development	Member of the Board	06-565-1081	06-565-1082
70.	Ms. Suha Mustafa	Arab Bank	Researcher	06-560-3142	
71.	Mr. Halim Abu Rahmeh	Jordan Trade Association	Managing Director	06-568-5603	06-068-5605
72.	Mr. Ahmed Qatarneh	General Corporation for Environmental Protection	Agenda 21 Coordinator	06-534-5172	06-534-5172
73.	Dr. Awni Taimeh	University of Jordan	Professor	06-535-5000 Ext. 2535	
74.	Mr. Tayseer Abdel Jaber	IMC	President	06-553-0856	06-553-0858
75.	Mr. Ali Gharyyan	Consultant	Consultant	06-547-2112	
76.	Mr. Subhi Ramadan	Env. consult. Co.	President	06-592-9067	06-593-4267
77.	Eng. Osama Abu Rayyan	EnviroConsult Office	Researcher	06-569-9769	06-569-7264
78.	Mr. Khalikd Mbark	News		06-566-8140	
79.	Ms. Marcia Macomber	US Embassy		06-592-0101 ext. 2412	
80.	Ms. Helena Naber	EnviroConsult Office	Researcher	06-569-9769	06-569-7264
81.	Mr. George Sibley	US Embassy		06-592-0101 ext. 2621	06-592-7653
82.	Mr. Khaled Momani	News		06-553-09001	06-566-8140
83.	Mr. Faisal Hamed	Central Electricity Generating Company	Safety & Env. Section	06-585-5459	
84.	Ms. Jumana Husseini	Euro-Jordanian	Business Counselor	06-554-0070	06-551-5025
85.	Mr. Batir Wardam	IUCN	Program Dev. Officer	06-593-1445	06-593-1447
86.	Mr. Ziyad Alawneh	IUCN	Communicator	06-593-1445	06-593-1447
87.	Ms. Rana Safadi	US Embassy	Env. Deve. Assistant	06-592-0121	06-592-0124
88.	Mr. Mohammed Al- Hurout	Jordan Environment Society			
89.	Mr. David Smith	AMIR	Environmentalist		
90.	Eng. Ra'ed Daoud	EnviroConsult Office	Managing Director	06-569-9769	06-569-7264
91.	Mr. Fares Khoury	BirdLife	Project Manager	06-535-5446	
92.	Dr. Musa Samha	University of Jordan	Dept. of Geography	06-535-5000	06-535-5511
93.	Mr. Ghaith Fariz	Ministry of Planning		06-462-9500	06-463-2736
94.	Ms. Rawda Abu Taha	BPWA	General Director	06-552-3277	06-552-3277
95.	Mr. Husam Taher	National Electrical Power Company	Manager QA	06-585-	

				8615/6520	
96.	Mr. Mohammed Al-Jala	Ministry of Energy	Assistant	06-586-3326	

Annex C Analysis of Responses and Comments

- Annex C-1 Analysis of Questionnaires and Tables
- Annex C-2 Result Analysis for "Non-Environmental Institutions" Respondent Category
- Annex C-3 Result Analysis for "Environmental Institutions" Respondent Category
- Annex C-4 Result Analysis for "Non-Governmental Institutions" Respondent Category
- Annex C-5 Result Analysis for "Governmental Institutions" Respondent Category
- Annex C-6 Result Analysis for “Industrial Institutions” Respondent Category
- Annex C-7 Respondent Information
- Annex C-8 Environmental Response Forms Results
- Annex C-9 Analysis Results for "All Respondents" Respondent Category
- Annex C-10 Analysis of Final Responses and Comments
- Annex C–11 The speeches of the speakers at the Public meeting.
- Annex C-12 Coalition paper of Local NGOs

Annex C-1 Analysis of Questionnaires and Tables

RESULTS AND ANALYSIS OF QUESTIONNAIRES DISTRIBUTED DURING THE INFORMATION MEETING

I. OBJECTIVES:

- Determine the types of environmental issues that are considered of highest importance according to Jordanian Stakeholders.
- Brainstorm for any new issues that have not been included in the Environmental Response Forms prepared by the Jordanian Negotiating Team.

II. METHODOLOGY:

During the Information Meeting that was held on the 13th of July 2000, "Environmental Response Forms" (ERF) were distributed to all participants. Participants were asked to fill the forms, and return them either immediately following the meeting, or in subsequent days, either by fax or by mail.

Data from the ERF was entered using the Microsoft Excel program, including a calculation that includes measures of central tendency (mean, median, and mode) and variation (standard deviation). Other measures that were calculated for every question category were: minimum assigned score, maximum assigned score, and skewdness of data.

Issues that scored an average rank between 4 - 5 were considered as "Most Important", issues that scored an average rank between 3 - 3.9 were considered "Somewhat Important", and issues that scored an average rank below 3 were considered "Least Important".

Respondents were divided into respondent categories, the following respondent categories were created:

1. Environmental Institutions: this category contains all institutions that are pro-environment.
2. Non-Environmental Institutions: this category contains all institutions that do not have the responsibility of environmental protection on their main agendas.
3. Industrial Institutions: this category represents industries, as well as organizations interested in industrial development in Jordan.
4. Governmental Institutions: includes institutions that are totally governmental in their structure and a semi-governmental institution (Royal Scientific Society).
5. Non-governmental Institutions: Non-profit and profit non-governmental organizations and private sector.

These respondent categories are not mutually exclusive, that is, a certain respondent may be included in more than one of these categories. Attempts to further narrow down the respondent categories were unsuccessful due to the insufficiency of respondents. Annex C-1 provides the organization and respondent category of the respondents.

III. RESULTS

The total responses received were 22 forms. Two of these forms were filled by the same person who represented two different institutions, this was eliminated. Another form was ignored because the respondent gave a rank of "5" to all the issues asked in ERF. Therefore, the total number of forms that were entered and analyzed was 20. The response rate for the ERF was approximately 26% (members of the negotiating and environmental review working teams were not included into the response rate calculations).

The assigned scores ranged from 1-5. On average, across most of the category data was skewed to the right, i.e. towards the higher scores: 3 - 5. Annex C-2 provides the results as answered by the respondents.

IV. Analysis

Annex C-3 provides the average of all the respondents responses for the ERF, and Annexes 4 - 8 provide the averages of ERF responses by the established respondent categories.

1. Environmental Objectives of the FTA

All the issues in this category were ranked as "Most Important" except the "Removal of Barriers" issue and "Participation" issue. These are outlined below, in descending order according to perceived importance by all participants (numbers between parentheses are the average rank achieved by the issue):

- Pollution Control (4.7)
- Sustainability (4.6)
- Technical Capacity (4.3)
- Compliance (4.3)
- Voluntary Compliance (4.2)
- Performance monitoring (4.2)

The following table provides the highest score issues within each of the respondent categories:

Table C-1 The Highest Ranking Issue Within Each of the Respondent Categories

Respondent Category	**Issue**	**Average**
All Respondents	Pollution Control	4.7
Environmental Institutions	Sustainability	4.9
Governmental Institutions	Sustainability	4.8
Industrial Institutions	Pollution Control	5.0
Non-Environmental Institutions	Pollution Control	4.8
NGOs & Private Sector	Pollution Control	4.9

Among the "Most Important" issues, the issue of "Technical Capacity" was considered "Somewhat Important" in the Governmental Institutions respondent category.

The issue of Participation was ranked as "Somewhat Important" within all respondent categories except the Environmental, Non-Environmental, and Non-Governmental respondent categories.

2. Environmental Principles and Practices to be Incorporated into FTA

The overall average of ranks attained by issues in this category ranged between the low of 3.9 and the high of 4.5. The highest score was attained by the "Legal and Institutional Improvement" issue with an average score of 4.5.

All issues in this category had an average rank of "Most Important" except for the issue of "Continuing Dialogue" which gained an average of 3.9.

The following table provides the highest score issues within each of the respondent categories:

Table C-2 The Highest Ranking Issue Within Each of the Respondent Categories

Respondent Category	**Issue**	**Average**
All Respondents	Legal / Institutional Improvements	4.3
Environmental Institutions	Legal / Institutional Improvements	4.7
Governmental Institutions	Legal / Institutional Improvements	4.6
Industrial Institutions	Impact Reviews	4.4
Non-Environmental Institutions	Economic Incentives	4.2
NGOs & Private Sector	Impact Reviews, and Legal / Institutional Improvements	4.4

Among the "Most Important" issues, the following issues were considered "Somewhat Important" by the following respondent categories:

- Issue of "Emergency Planning" was considered "Somewhat Important" by Industrial institution respondent category.
- Issue of "Enforcement" was considered "Somewhat Important" by Industrial and Governmental institution respondent category.
- Issue of "Performance Reporting" was considered "Somewhat Important" by Industrial institutions respondent category.
- Issue of "Self Management" was considered "Somewhat Important" by Environmental and Governmental institution respondent categories.

The issue "Continuing Dialogue" was ranked as "Most Important" only within the Environmental and Governmental institution respondent categories.

3. Impact Typology: Demand for Raw Materials and Other Production Process Inputs

Within this category the issues that were considered overall as "Most Important" were fewer in number than the issues within the first two categories of issues.

Overall average showed that the highest importance was attributed, as expected, to "Water Resources and Demands" issue. This issue was followed within the "Most Important" ranking by: "Water and Wastewater Quality", and "Generation and Disposal of Toxic and Hazardous Wastes" issues.

The following table provides the highest score issues within each of the respondent categories:

Table C-3 The Highest Ranking Issue Within Each of the Respondent Categories

Respondent Category	**Issue**	**Average**
All Respondents	Water Resources and Demands	4.6
Environmental Institutions	Water Resources and Demands	4.5
Governmental Institutions	Generation and Disposal of Solid Wastes	4.4
Industrial Institutions	Water Resources and Demands	4.4
Non-Environmental Institutions	Water Resources and Demands	4.6
NGOs & Private Sector	Water Resources and Demands	4.7

Issues that according to overall average were considered as "Somewhat Important" were:

- Generation and Disposal of Solid Wastes: Considered as "Most Important" only within the Environmental and Governmental institution respondent categories.
- Natural Resources: Considered as "Most Important" only within the Environmental, Governmental, and Industrial institution respondent categories.
- Energy Demands: Considered as "Most Important" only within the Environmental institution respondent category.
- Land Use Changes: Considered as "Most Important" only within the Environmental institution respondent category.
- Air Quality
- Cultural Resources: this issue was assigned a "Least Important" rank within the Governmental and Industrial institution respondent categories.

4. Impact Typology: Development, Expansion, and / or Modernization of Production Sites:

Overall average of importance scores given by respondents showed that the highest ranking issue was "Water Resources and Demand". Other issues ranked as "Most Important" are: "Water and Wastewater Quality", "Natural Resources", "Generation and Disposal of Toxic / Hazardous Materials", "Energy Demands", and "Generation and Disposal of Solid Wastes".

The following table provides the highest score issues within each of the respondent categories:

Table C-4 The Highest Ranking Issue Within Each of the Respondent Categories

Respondent Category	**Issue**	**Average**
All Respondents	Water Resources and Demands	4.5
Environmental Institutions	Generation and Disposal of Solid Wastes	4.6
Governmental Institutions	Generation and Disposal of Solid Wastes, and Natural Resources	4.4
Industrial Institutions	Natural Resources	4.4
Non-Environmental Institutions	Water Resources and Demands, and Water and Wastewater Quality	4.5
NGOs & Private Sector	Water Resources and Demands	4.6

Among the issues that attained the overall ranking of "Most Important", the following issues received a "Somewhat Important" ranking by specific respondent categories, these were:

- "Water and Wastewater Quality" was considered "Somewhat Important" by Industrial institution respondent category.
- " Generation or Disposal of Solid Wastes " was considered "Somewhat Important" by Industrial, Non-Environmental and Non-Governmental institution respondent categories.
- "Energy Demands" was considered "Somewhat Important" by Non-Environmental institution respondent category.
- "Generation/Disposal of Toxic/Hazardous Wastes" was considered " Most Important" by Environmental, and Governmental institution respondent categories. Although related 'Somewhat Important" by Industrial institution and Non-Governmental institution.

Issues that received an overall ranking of "Somewhat Important" were as follows :

- Air Quality
- Land Use Changes
- Cultural Resources: this issue was assigned a "Least Important" rank within the Governmental and Industrial institution respondent categories.

5. Impact Typology: Development, Expansion, and/or Modernization of Transportation Facilities:
Overall, this category received the least number of issues that were considered as "Most Important", and the highest number of issues considered as "Least Important" within the institution respondent categories. Overall average indicates that the highest ranking issues are "Energy Demands", "Natural Resources", and "Air Quality".

Table C-5 The Highest Ranking Issue Within Each of the Respondent Categories

Respondent Category	**Issue**	**Average**
All Respondents	Energy Demands	4.4
Environmental Institutions	Energy Demands, and Natural Resources	4.2
Governmental Institutions	Natural Resources	4.4
Industrial Institutions	Energy Demands	4.2
Non-Environmental Institutions	Energy Demands	4.5
NGOs & Private Sector	Energy Demands	4.5

Among the issues that attained the overall ranking of "Most Important", the following issues received a "Somewhat Important" ranking by specific respondent categories, these are:

- Issue of "Natural Resources" was considered "Somewhat Important" by Industrial institution respondent category.
- Issue of "Air Quality" was considered "Somewhat Important" by Environmental and Governmental institution respondent categories.

The following issues were assigned an overall rank of "Somewhat Important" within the "All Respondents" category:

- Land Use Changes
- Generation and Disposal of Toxic / Hazardous Wastes
- Transboundary and Regional Effects
- Water Resources and Demands
- Water and Wastewater Quality
- Generation and Disposal of Solid Wastes
- Cultural Resources

The following issues were ranked as Least important by the following institution respondent categories:

- The issue of "Generation and Disposal of Solid Wastes" was ranked as "Least Important" by Governmental and Industrial institution respondent categories.
- The issue of "Transboundary and Regional Effects" was ranked as "Least Important" by Governmental institution respondent category.
- The issue of "Water Resources and Demand" was ranked as "Least Important" by Environmental, Governmental, and Industrial institution respondent categories.
- The issue of "Water and Wastewater Quality" was ranked as "Least Important" by Governmental and Industrial institution respondent categories.
- The issue of "Generation and Disposal of Solid Waste" was ranked as "Least Important" by Governmental and Industrial institution respondent categories.
- The issue of "Cultural Resources" was ranked as "Least Important" by Industrial and Non-Environmental institution respondent categories.

IV. CONCLUSIONS

Table 6 provides a summary of the issues to be considered as the most important. These issues have been compiled by taking the "Most Important" two issues of the "All Respondents" Category, in addition to the "Most Important" issue of each of the other respondent categories.

Table C-6 Highest Ranked Environmental Issues

ERF Issues	Issue 1	Issue 2	Issue 3	Issue 4	Issue 5
Environmental Objectives of the FTA	Pollution Control	Sustainability	-	-	-
Environmental Principles and Practices to be Incorporated into FTA	Legal and Institutional Improvement	-	Impact Reviews	Economic Incentives	-
Impact Typology: Demand for Raw Materials and Other Production Process Inputs	Water Resources and Demands	Water and Wastewater Quality	Generation and Disposal of Solid Wastes	-	-
Impact Typology: Development, Expansion, and / or Modernization of Production Sites	Water Resources and Demand	Water and Wastewater Quality	Generation and Disposal of Solid Wastes	Natural Resources	Water and Wastewater Quality
Impact Typology: Development, Expansion, and/or Modernization of Transportation Facilities	Energy Demands	Natural Resources	-	-	-

Annex C-2 Result Analysis for "Non-Environmental Institutions" Respondent Category

Code	Environmental Issues	Average	Median	Mode	Standard Deviation	Skewedness	Minimum	Maximum
18	**Env 'tl Objectives FTA**							
19	1. Sustainability	4.5	5.0	5.0	1.2	-2.5	1.0	5.0
20	2. Remove Barriers	3.2	3.0	3.0	1.1	-0.7	1.0	5.0
21	3. Technical Capacity	4.3	4.0	4.0	0.9	-1.7	2.0	5.0
22	4. Pollution Control	4.8	5.0	N/A	0.4	-2.1	4.0	5.0
23	5. Compliance	4.2	5.0	5.0	1.2	-1.3	2.0	5.0
24	6. Voluntary Compliance	4.2	4.0	4.0	0.8	-0.3	3.0	5.0
25	7. Participation	4.0	4.0	N/A	1.2	-1.5	1.0	5.0
26	8. Performance Monitoring	4.2	5.0	5.0	1.1	-1.1	2.0	5.0
28	**Env 'tl Principles & Practices to be Incorporated into FTA**							
29	1. Performance reporting	4.1	4.0	5.0	1.0	-0.7	2.0	5.0
30	2. Legal/institutional improvements	4.3	5.0	5.0	1.1	-1.6	2.0	5.0
31	3. Economic instruments	4.2	4.0	4.0	0.8	-0.3	3.0	5.0
32	4. Impact reviews	4.3	5.0	N/A	1.1	-1.1	2.0	5.0
33	5. Enforcement	4.1	4.0	5.0	1.2	-1.6	1.0	5.0
34	6. Self-management	4.2	4.0	4.0	1.1	-2.3	1.0	5.0
35	7. Emergency planning	4.2	4.0	5.0	1.1	-1.9	1.0	5.0
36	8. Continuing dialogue	3.7	4.0	4.0	1.4	-1.2	1.0	5.0
38	**Typology of Potential Env 'tl Impacts**							
39	*1st. Demand for raw materials and other production process inputs :*							
40	a. Water resources & demands	4.6	5.0	5.0	1.1	-3.3	1.0	5.0
41	b. Water and WW quality	4.5	5.0	5.0	1.1	-2.8	1.0	5.0
42	c. Air quality	3.5	3.0	3.0	0.9	0.3	2.0	5.0
43	d. Energy demands	3.7	4.0	5.0	1.3	-0.8	1.0	5.0
44	e. Generation /disposal of SW	3.7	4.0	4.0	1.0	-0.3	2.0	5.0
45	f. Generation /disposal of toxic /hazardous wastes	4.2	5.0	N/A	1.3	-1.7	1.0	5.0
46	g. Land use changes	3.2	3.0	3.0	1.2	-0.2	1.0	5.0
47	h. Natural resources	3.8	4.0	4.0	1.1	-0.4	2.0	5.0
48	i. Cultural resources	3.2	3.0	3.0	0.7	1.2	2.0	5.0
50	*2nd. Development , expansion and / or modernization of production sites :*							
51	a. Water resources & demands	4.5	5.0	N/A	1.2	-3.0	1.0	5.0
52	b. Water and WW quality	4.5	5.0	N/A	1.2	-2.7	1.0	5.0
53	c. Air quality	3.8	4.0	N/A	1.0	-0.3	2.0	5.0
54	d. Energy demands	3.9	4.5	N/A	1.4	-1.2	1.0	5.0
55	e. Generation /disposal of SW	3.6	4.0	N/A	1.1	-0.2	2.0	5.0
56	f. Generation /disposal of toxic /hazardous wastes	3.8	4.0	N/A	1.5	-1.2	1.0	5.0
57	g. Land use changes	3.6	3.5	N/A	1.2	0.0	2.0	5.0
58	h. Natural resources	4.1	4.0	N/A	0.9	-1.1	2.0	5.0
59	i. Cultural resources	3.4	3.0	N/A	1.0	0.4	2.0	5.0
61	*3rd. Development , expansion and /or modernization of transportation facilities*							
62	a. Water resources & demands	3.4	3.5	N/A	1.5	-0.6	1.0	5.0
63	b. Water and wastewater quality	3.2	3.0	N/A	1.3	-0.1	1.0	5.0
64	c. Air quality	4.3	5.0	N/A	1.2	-2.4	1.0	5.0
65	d. Energy demands	4.5	5.0	N/A	1.2	-2.7	1.0	5.0
66	e. Generation & disposal of SW	3.2	3.0	N/A	1.2	0.0	1.0	5.0
67	f. Generation & disposal of toxic /hazardous waste	3.6	3.5	N/A	1.4	-0.5	1.0	5.0
68	g. Land use changes	3.6	3.5	N/A	1.3	-0.7	1.0	5.0
69	h. Natural resources	4.1	4.0	N/A	1.0	-1.1	2.0	5.0
70	i. Cultural resources	2.9	3.0	N/A	1.2	-0.2	1.0	5.0
71	j. Transboundary & regional effects	3.5	3.0	N/A	1.1	0.1	2.0	5.0

N/A: Not Available

Annex C-3 Result Analysis for "Environmental Institutions" Respondent Category

Code	Environmental Issues	Average	Median	Mode	Standard Deviation	Skewedness	Minimum	Maximum
18	**Env'tl Objectives FTA**							
19	1. Sustainability	4.9	5.0	5.0	0.4	-2.6	4.0	5.0
20	2. Remove Barriers	3.4	3.0	3.0	0.5	0.4	3.0	4.0
21	3. Technical Capacity	4.3	5.0	5.0	1.0	-0.8	3.0	5.0
22	4. Pollution Control	4.4	5.0	5.0	0.8	-1.1	3.0	5.0
23	5. Compliance	4.3	4.0	4.0	0.8	-0.6	3.0	5.0
24	6. Voluntary Compliance	4.3	5.0	5.0	1.0	-0.8	3.0	5.0
25	7. Participation	3.9	4.0	3.0	0.9	0.4	3.0	5.0
26	8. Performance Monitoring	4.3	4.0	4.0	0.8	-0.6	3.0	5.0
28	**Env'tl Principles & Practices to be Incorporated into FTA**							
29	1. Performance reporting	4.4	5.0	5.0	0.8	-1.1	3.0	5.0
30	2. Legal/institutional improvements	4.7	5.0	5.0	0.5	-1.2	4.0	5.0
31	3. Economic instruments	4.3	4.0	4.0	0.8	-0.6	3.0	5.0
32	4. Impact reviews	4.4	5.0	5.0	0.8	-1.1	3.0	5.0
33	5. Enforcement	4.3	5.0	5.0	1.0	-0.8	3.0	5.0
34	6. Self-management	3.7	4.0	4.0	1.1	-0.2	2.0	5.0
35	7. Emergency planning	4.4	5.0	5.0	1.0	-1.2	3.0	5.0
36	8. Continuing dialogue	4.3	4.0	4.0	0.8	-0.6	3.0	5.0
38	**Typology of Potential Env'l Impacts**							
39	*1st. Demand for raw materials and other production process inputs*							
40	a. Water resources & demands	4.5	5.0	N/A	0.8	-1.5	3.0	5.0
41	b. Water and WW quality	4.3	4.0	4.0	0.8	-0.6	3.0	5.0
42	c. Air quality	3.7	4.0	5.0	1.1	-0.2	2.0	5.0
43	d. Energy demands	4.0	4.0	4.0	0.6	0.0	3.0	5.0
44	e. Generation/disposal of SW	4.4	4.0	4.0	0.5	0.4	4.0	5.0
45	f. Generation/disposal of toxic/hazardous wastes	4.3	5.0	5.0	1.0	-0.8	3.0	5.0
46	g. Land use changes	4.0	4.0	4.0	0.8	0.0	3.0	5.0
47	h. Natural resources	4.3	4.0	4.0	0.8	-0.6	3.0	5.0
48	i. Cultural resources	3.1	3.0	4.0	0.9	-0.4	2.0	4.0
50	*2nd. Development, expansion and/or modernization of production sites*							
51	a. Water resources & demands	4.4	5.0	5.0	1.0	-1.2	3.0	5.0
52	b. Water and WW quality	4.1	4.0	5.0	0.9	-0.4	3.0	5.0
53	c. Air quality	3.4	3.0	3.0	1.1	0.7	2.0	5.0
54	d. Energy demands	4.3	4.0	4.0	0.8	-0.6	3.0	5.0
55	e. Generation/disposal of SW	4.6	5.0	5.0	0.5	-0.4	4.0	5.0
56	f. Generation/disposal of toxic/hazardous wastes	4.3	4.0	4.0	0.8	-0.6	3.0	5.0
57	g. Land use changes	3.6	3.0	3.0	1.0	1.2	3.0	5.0
58	h. Natural resources	4.4	5.0	5.0	0.8	-1.1	3.0	5.0
59	i. Cultural resources	3.3	3.0	2.0	1.1	0.2	2.0	5.0
61	*3rd. Development, expansion and/or modernization of transportation facilities*							
62	a. Water resources & demands	2.8	3.0	N/A	1.2	-0.7	1.0	4.0
63	b. Water and wastewater quality	3.0	3.0	N/A	1.1	1.4	2.0	5.0
64	c. Air quality	3.7	3.5	N/A	1.2	-0.1	2.0	5.0
65	d. Energy demands	4.2	4.5	N/A	1.0	-0.5	3.0	5.0
66	e. Generation & disposal of SW	3.0	3.0	N/A	0.6	0.0	2.0	4.0
67	f. Generation & disposal of toxic/hazardous was	3.2	3.0	N/A	1.7	0.0	1.0	5.0
68	g. Land use changes	3.6	4.0	N/A	0.5	-0.6	3.0	4.0
69	h. Natural resources	4.2	4.0	N/A	0.8	-0.3	3.0	5.0
70	i. Cultural resources	3.2	3.0	N/A	0.8	-0.3	2.0	4.0
71	j. Transboundary & regional effects	3.0	3.0	N/A	0.9	0.0	2.0	4.0

N/A: Not Available

Annex C-4 Result Analysis for "Non-Governmental Institutions" Respondent Category

Code	Environmental Issues	Average	Median	Mode	Standard Deviation	Skewedness	Minimum	Maximum
18	**Env'tl Objectives FTA**							
19	1. Sustainability	4.5	5.0	5.0	1.1	-2.7	1.0	5.0
20	2. Remove Barriers	3.1	3.0	3.0	1.1	-0.7	1.0	5.0
21	3. Technical Capacity	4.5	5.0	5.0	0.8	-2.0	2.0	5.0
22	4. Pollution Control	4.9	5.0	N/A	0.4	-2.3	4.0	5.0
23	5. Compliance	4.3	5.0	5.0	1.1	-1.4	2.0	5.0
24	6. Voluntary Compliance	4.3	4.0	5.0	0.8	-0.6	3.0	5.0
25	7. Participation	4.1	4.5	N/A	1.2	-1.7	1.0	5.0
26	8. Performance Monitoring	4.3	5.0	5.0	1.1	-1.4	2.0	5.0
28	**Env'tl Principles & Practices to be Incorporated into FTA**							
29	1. Performance reporting	4.2	5.0	5.0	1.0	-0.9	2.0	5.0
30	2. Legal /institutional improvements	4.4	5.0	5.0	1.1	-1.8	2.0	5.0
31	3. Economic instruments	4.1	4.0	5.0	0.8	-0.3	3.0	5.0
32	4. Impact reviews	4.4	5.0	N/A	1.0	-1.4	2.0	5.0
33	5. Enforcement	4.3	5.0	5.0	1.2	-1.9	1.0	5.0
34	6. Self-management	4.3	4.0	4.0	1.0	-2.4	1.0	5.0
35	7. Emergency planning	4.3	5.0	5.0	1.1	-2.1	1.0	5.0
36	8. Continuing dialogue	3.9	4.0	5.0	1.4	-1.3	1.0	5.0
38	**Typology of Potential Env'tl Impacts**							
39	*1st. Demand for raw materials and other production process inputs :*							
40	a. Water resources & demands	4.7	5.0	5.0	1.0	-3.5	1.0	5.0
41	b.Water and WW quality	4.5	5.0	5.0	1.1	-2.8	1.0	5.0
42	c. Air quality	3.5	3.0	3.0	0.8	0.3	2.0	5.0
43	d. Energy demands	3.8	4.0	5.0	1.2	-1.0	1.0	5.0
44	e. Generation/disposal of SW	3.8	4.0	4.0	1.0	-0.5	2.0	5.0
45	f. Generation/disposal of toxic/hazardous wastes	4.3	5.0	N/A	1.2	-1.9	1.0	5.0
46	g. Land use changes	3.4	3.0	3.0	1.2	-0.3	1.0	5.0
47	h. Natural resources	3.9	4.0	5.0	1.1	-0.6	2.0	5.0
48	i. Cultural resources	3.3	3.0	3.0	0.7	0.7	2.0	5.0
50	*2nd. Development , expansion and / or modernization of production sites :*							
51	a. Water resources & demands	4.6	5.0	N/A	1.1	-3.3	1.0	5.0
52	b.Water and WW quality	4.5	5.0	N/A	1.1	-2.8	1.0	5.0
53	c. Air quality	3.8	4.0	N/A	1.0	-0.3	2.0	5.0
54	d. Energy demands	4.0	4.5	N/A	1.3	-1.3	1.0	5.0
55	e. Generation/disposal of SW	3.8	4.0	N/A	1.1	-0.4	2.0	5.0
56	f. Generation/disposal of toxic/hazardous wastes	3.9	4.0	N/A	1.4	-1.4	1.0	5.0
57	g. Land use changes	3.6	3.0	N/A	1.2	0.2	2.0	5.0
58	h. Natural resources	4.2	4.0	N/A	0.9	-1.2	2.0	5.0
59	i. Cultural resources	3.5	3.0	N/A	1.1	0.1	2.0	5.0
61	*3rd. Development , expansion and /or modernization of transportation facilities*							
62	a. Water resources & demands	3.4	3.5	N/A	1.4	-0.7	1.0	5.0
63	b.Water and wastewater quality	3.3	3.0	N/A	1.3	0.1	1.0	5.0
64	c. Air quality	4.3	5.0	N/A	1.1	-2.5	1.0	5.0
65	d. Energy demands	4.5	5.0	N/A	1.1	-2.8	1.0	5.0
66	e. Generation & disposal of SW	3.2	3.0	N/A	1.1	-0.1	1.0	5.0
67	f. Generation & disposal of toxic/hazardous waste	3.7	4.0	N/A	1.4	-0.6	1.0	5.0
68	g. Land use changes	3.5	4.0	N/A	1.1	-0.9	1.0	5.0
69	h. Natural resources	4.1	4.0	N/A	0.9	-1.1	2.0	5.0
70	i.Cultural resources	3.0	3.0	N/A	1.2	-0.4	1.0	5.0
71	j. Transboundary & regional effects	3.6	4.0	N/A	1.0	-0.1	2.0	5.0

N/A: Not Available

Annex C-5 Result Analysis for "Governmental Institutions" Respondent Category

Code	Environmental Issues	Average	Median	Mode	Standard Deviation	Skewedness	Minimum	Maximum
18	**Env'tl Objectives FTA**							
19	1. Sustainability	4.8	5.0	5.0	0.4	-2.2	4.0	5.0
20	2. Remove Barriers	3.6	4.0	4.0	0.5	-0.6	3.0	4.0
21	3. Technical Capacity	3.8	4.0	4.0	0.8	0.5	3.0	5.0
22	4. Pollution Control	4.2	4.0	4.0	0.8	-0.5	3.0	5.0
23	5. Compliance	4.2	4.0	4.0	0.8	-0.5	3.0	5.0
24	6. Voluntary Compliance	4.0	4.0	5.0	1.0	0.0	3.0	5.0
25	7. Participation	3.4	3.0	3.0	0.5	0.6	3.0	4.0
26	8. Performance Monitoring	4.0	4.0	4.0	0.7	0.0	3.0	5.0
28	**Env'tl Principles& Practices to be Incorporated into FTA**							
29	1. Performance reporting	4.2	4.0	4.0	0.8	-0.5	3.0	5.0
30	2. Legal/institutional improvements	4.6	5.0	5.0	0.5	-0.6	4.0	5.0
31	3. Economic instruments	4.4	4.0	4.0	0.5	0.6	4.0	5.0
32	4. Impact reviews	4.2	4.0	4.0	0.8	-0.5	3.0	5.0
33	5. Enforcement	3.8	4.0	4.0	0.8	0.5	3.0	5.0
34	6. Self-management	3.2	3.0	4.0	0.8	-0.5	2.0	4.0
35	7. Emergency planning	4.2	5.0	5.0	1.1	-0.6	3.0	5.0
36	8. Continuing dialogue	4.0	4.0	4.0	0.7	0.0	3.0	5.0
38	**Typology of Potential Env't Impacts**							
39	*1st. Demand for raw materials and other production process inputs*							
40	a. Water resources& demands	4.3	4.5	N/A	1.0	-0.9	3.0	5.0
41	b.Water and WW quality	4.2	4.0	4.0	0.8	-0.5	3.0	5.0
42	c. Air quality	3.8	4.0	5.0	1.3	-0.5	2.0	5.0
43	d. Energy demands	3.8	4.0	4.0	0.4	-2.2	3.0	4.0
44	e. Generation/disposal of SW	4.4	4.0	4.0	0.5	0.6	4.0	5.0
45	f. Generation/disposal of toxic/hazardous wastes	4.0	4.0	3.0	1.0	0.0	3.0	5.0
46	g. Land use changes	3.8	4.0	4.0	0.8	0.5	3.0	5.0
47	h. Natural resources	4.0	4.0	4.0	0.7	0.0	3.0	5.0
48	i. Cultural resources	2.8	3.0	2.0	0.8	0.5	2.0	4.0
50	*2nd. Development, expansion and/or modernization of production sites*							
51	a. Water resources& demands	4.2	5.0	5.0	1.1	-0.6	3.0	5.0
52	b.Water and WW quality	4.0	4.0	3.0	1.0	0.0	3.0	5.0
53	c. Air quality	3.2	3.0	3.0	1.1	1.3	2.0	5.0
54	d. Energy demands	4.2	4.0	4.0	0.8	-0.5	3.0	5.0
55	e. Generation/disposal of SW	4.4	4.0	4.0	0.5	0.6	4.0	5.0
56	f. Generation/disposal of toxic/hazardous wastes	4.2	4.0	4.0	0.8	-0.5	3.0	5.0
57	g. Land use changes	3.6	3.0	3.0	0.9	1.3	3.0	5.0
58	h. Natural resources	4.4	5.0	5.0	0.9	-1.3	3.0	5.0
59	i. Cultural resources	2.8	3.0	2.0	0.8	0.5	2.0	4.0
61	*3rd. Development, expansion and/or modernization of transportation facilities*							
62	a. Water resources& demands	2.5	2.5	N/A	1.3	0.0	1.0	4.0
63	b.Water and wastewater quality	2.8	2.5	N/A	1.0	0.9	2.0	4.0
64	c. Air quality	3.3	3.0	N/A	1.3	1.1	2.0	5.0
65	d. Energy demands	4.0	4.0	N/A	1.2	0.0	3.0	5.0
66	e. Generation& disposal of SW	2.8	3.0	N/A	0.5	-2.0	2.0	3.0
67	f. Generation& disposal of toxic/hazardous was	2.8	2.5	N/A	1.7	0.8	1.0	5.0
68	g. Land use changes	3.8	3.5	N/A	1.0	0.9	3.0	5.0
69	h. Natural resources	4.3	4.5	N/A	1.0	-0.9	3.0	5.0
70	i.Cultural resources	3.0	3.0	N/A	0.8	0.0	2.0	4.0
71	j. Transboundary& regional effects	2.5	2.5	N/A	0.6	0.0	2.0	3.0

N/A: Not Available

Annex C-6 Result Analysis for "Industrial Institutions" Respondent Category

Code	Environmental Issues	Average	Median	Mode	Standard Deviation	Skewedness	Minimum	Maximum
18	**Env'tl Objectives FTA**							
19	1. Sustainability	4.1	5.0	5.0	1.6	-1.8	1.0	5.0
20	2. Remove Barriers	3.0	3.0	3.0	1.5	-0.4	1.0	5.0
21	3. Technical Capacity	4.3	5.0	5.0	1.1	-1.8	2.0	5.0
22	4. Pollution Control	5.0	5.0	N/A	0.0	N/A	5.0	5.0
23	5. Compliance	4.1	5.0	5.0	1.2	-1.1	2.0	5.0
24	6. Voluntary Compliance	4.1	4.0	5.0	0.9	-0.4	3.0	5.0
25	7. Participation	3.7	4.0	4.0	1.4	-1.4	1.0	5.0
26	8. Performance Monitoring	4.3	5.0	5.0	1.1	-1.8	2.0	5.0
28	**Env'tl Principles & Practices to be Incorporated into FTA**							
29	1. Performance reporting	3.7	4.0	3.0	1.1	-0.2	2.0	5.0
30	2. Legal/institutional improvements	4.3	5.0	5.0	1.1	-1.8	2.0	5.0
31	3. Economic instruments	4.1	4.0	5.0	0.9	-0.4	3.0	5.0
32	4. Impact reviews	4.4	5.0	5.0	1.1	-2.2	2.0	5.0
33	5. Enforcement	3.7	4.0	4.0	1.4	-1.4	1.0	5.0
34	6. Self-management	4.0	4.0	4.0	1.4	-2.0	1.0	5.0
35	7. Emergency planning	3.9	4.0	5.0	1.5	-1.4	1.0	5.0
36	8. Continuing dialogue	3.4	4.0	4.0	1.3	-1.1	1.0	5.0
38	**Typology of Potential Envtl Impacts**							
39	*1st. Demand for raw materials and other production process inputs:*							
40	a. Water resources & demands	4.4	5.0	5.0	1.5	-2.6	1.0	5.0
41	b.Water and WW quality	4.1	5.0	5.0	1.5	-2.1	1.0	5.0
42	c. Air quality	3.3	3.0	3.0	1.0	0.9	2.0	5.0
43	d. Energy demands	3.4	4.0	4.0	1.3	-1.1	1.0	5.0
44	e. Generation/disposal of SW	3.7	4.0	5.0	1.1	-0.2	2.0	5.0
45	f. Generation/disposal of toxic/hazardous wastes	4.2	5.0	N/A	1.6	-2.1	1.0	5.0
46	g. Land use changes	3.0	3.0	3.0	0.8	0.0	2.0	4.0
47	h. Natural resources	4.0	4.0	4.0	0.8	0.0	3.0	5.0
48	i. Cultural resources	2.9	3.0	3.0	0.4	-2.6	2.0	3.0
50	*2nd. Development , expansion and / or modernization of production sites:*							
51	a. Water resources & demands	4.2	5.0	N/A	1.8	-2.2	1.0	5.0
52	b.Water and WW quality	4.0	5.0	N/A	1.7	-1.9	1.0	5.0
53	c. Air quality	3.4	3.0	N/A	1.1	0.4	2.0	5.0
54	d. Energy demands	4.0	5.0	N/A	1.7	-1.9	1.0	5.0
55	e. Generation/disposal of SW	3.2	3.0	N/A	0.8	-0.5	2.0	4.0
56	f. Generation/disposal of toxic/hazardous wastes	3.8	4.0	N/A	1.6	-1.7	1.0	5.0
57	g. Land use changes	3.0	3.0	N/A	1.0	0.0	2.0	4.0
58	h. Natural resources	4.4	4.0	N/A	0.5	0.6	4.0	5.0
59	i. Cultural resources	2.8	3.0	N/A	0.8	0.5	2.0	4.0
61	*3rd. Development , expansion and/or modernization of transportation facilities*							
62	a. Water resources & demands	2.8	3.0	N/A	1.8	0.1	1.0	5.0
63	b.Water and wastewater quality	2.4	2.0	N/A	1.1	0.4	1.0	4.0
64	c. Air quality	4.0	5.0	N/A	1.7	-1.9	1.0	5.0
65	d. Energy demands	4.2	5.0	N/A	1.8	-2.2	1.0	5.0
66	e. Generation & disposal of SW	2.6	3.0	N/A	0.9	-2.2	1.0	3.0
67	f. Generation & disposal of toxic/hazardous wast	2.8	3.0	N/A	1.5	0.6	1.0	5.0
68	g. Land use changes	3.3	3.5	N/A	1.7	-0.8	1.0	5.0
69	h. Natural resources	3.8	4.0	N/A	1.3	-0.5	2.0	5.0
70	i.Cultural resources	2.6	3.0	N/A	1.1	-0.4	1.0	4.0
71	j. Transboundary & regional effects	3.4	3.0	N/A	1.1	0.4	2.0	5.0

N/A: Not Available

Annex C-7 Respondent Information

Respondent Code	Organization	Type	Specialization	Profile
E1	Natural Resources Authority	Gov	PI	Environmental
E2	Aswaq NP	Non-Gov	Media	Non-Environmental
E3	JPRC	Non-Gov	Industry	Non-Environmental
E4	Zarqa Chamber of Industry	Non-Gov	Industry	Non-Environmental
E5	JUSBP	Non-Gov	Industry	Non-Environmental
E6	RSS	Gov	Research	Environmental
E7	ARA	Gov	PI	Environmental
E8	Jordan Securities Commision	Non-Gov	financial	Non-Environmental
E9	BirdLife International	Non-Gov	NGO	Environmental
E10	Jordan Environment Society	Non-Gov	NGO	Environmental
E11	Central Electricity Generality	Non-Gov	Industry	Non-Environmental
E12	Water Authority of Jordan	Gov	PI	Environmental
E13	Nuqul Group	Non-Gov	Industry	Non-Environmental
E14	Institute of Management Consultants	Non-Gov	Research	Non-Environmental
E15	Women's Business Association	Non-Gov	NGO	Non-Environmental
E16	Amman Chamber of Industry	Non-Gov	Industry	Non-Environmental
E17	Arab Bank	Non-Gov	financial	Non-Environmental
E18	UNDP	Non-Gov	International Org	Environmental
E19	Arab Bank	Non-Gov	Financial	Non-Environmental
E20	Arab Bank	Non-Gov	financial	Non-Environmental
E21	JEDCO	Gov	Industry	Non-Environmental

Gov: Governmental and Semi -Governmental Institutions
Non-Gov: Non-Governmental Organizations and Private Sector
PI: Public Institution
NGO: Non-Governmental Organization
Questionnaire eliminated

Annex C-8 Environmental Response Forms Results

No.	Environmental Issue	Questionnaire Numbers																			
		E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	E18	E19	E21
18	**Env 'tl Objectives FTA**																				
19	1. Sustainability	5	5	5	1	5	5	4	5	5	5	5	5	5	5	4	3	5	5	5	5
20	2. Remove Barriers	3	4	3	1	5	4	4	3	3	4	3	3	4	3	3	1	4	3	3	4
21	3. Technical Capacity	4	4	5	2	4	5	3	5	5	5	5	3	5	4	4	5	4	5	5	4
22	4. Pollution Control	4	4	5	N/A	5	4	3	5	5	5	5	5	5	5	4	5	5	5	5	5
23	5. Compliance	4	2	5	2	3	4	3	5	4	5	5	5	4	5	4	5	5	5	5	5
24	6. Voluntary Compliance	5	4	4	3	3	4	3	3	5	5	5	3	4	4	5	5	4	5	5	5
25	7. Participation	3	N/A	4	1	3	4	3	5	5	5	5	3	4	4	3	5	5	4	5	4
26	8. Performance Monitoring	4	2	5	2	5	5	4	5	5	5	5	3	4	4	3	5	5	4	5	4
28	**Env 'tl Principles & Practices to be Incorporated into FTA**																				
29	1. Performance reporting	3	3	3	2	3	4	4	5	5	5	5	5	4	5	4	4	5	5	5	5
30	2. Legal/institutional improvements	4	2	5	2	4	5	4	5	5	5	5	5	4	4	5	5	5	5	5	5
31	3. Economic instruments	4	4	5	3	5	4	5	5	3	4	3	5	4	5	3	5	4	5	4	4
32	4. Impact reviews	4	N/A	5	2	5	5	4	3	5	5	5	3	4	5	3	5	5	5	4	5
33	5. Enforcement	5	3	3	1	5	4	3	5	5	5	5	3	4	5	4	4	5	5	5	4
34	6. Self-management	2	4	4	1	5	4	3	5	4	5	5	3	4	4	4	5	5	5	4	4
35	7. Emergency planning	3	4	4	1	3	5	5	5	5	5	5	3	4	4	5	5	4	5	5	5
36	8. Continuing dialogue	4	1	4	1	5	4	3	5	4	5	3	5	4	4	4	3	5	5	5	4
38	**Typology of Potential Env 'tl Impacts**																				
39	*1st. Demand for raw materials and other production process inputs*																				
40	a. Water resources & demands	4	5	5	1	5	N/A	3	5	5	5	5	5	5	5	5	5	4	5	5	5
41	b.Water and WW quality	3	5	5	1	5	4	4	5	5	5	5	5	4	5	5	4	4	4	5	5
42	c. Air quality	2	4	3	2	3	5	4	5	5	4	3	3	3	4	4	4	3	3	3	5
43	d. Energy demands	4	2	5	1	3	4	4	3	5	4	3	3	4	5	5	4	4	4	5	4
44	e. Generation/disposal of SW	4	2	5	2	5	4	5	5	4	5	3	5	4	4	4	3	3	4	4	4
45	f. Generation/disposal of toxic/hazardous wastes	3	3	N/A	1	5	4	5	5	5	5	5	3	4	5	5	5	3	5	4	5
46	g. Land use changes	4	1	2	2	3	5	3	5	5	4	3	3	4	3	3	3	4	4	5	4
47	h. Natural resources	3	2	3	4	4	4	4	5	5	5	5	5	3	2	4	5	3	4	5	4
48	i. Cultural resources	2	3	3	3	3	4	2	5	3	4	3	3	2	3	4	3	3	4	4	3
50	*2nd. Development, expansion and / or modernization of production sites*																				
51	a. Water resources & demands	3	5	5	1	N/A	5	3	5	5	5	5	5	5	5	5	N/A	4	5	5	5
52	b.Water and WW quality	3	5	5	1	N/A	4	3	5	5	5	5	5	4	5	5	N/A	4	4	5	5
53	c. Air quality	2	3	4	2	N/A	3	3	5	5	5	3	3	3	4	4	N/A	4	3	5	5
54	d. Energy demands	4	2	5	1	N/A	3	4	3	5	5	5	5	4	5	N/A	N/A	4	4	5	5
55	e. Generation/disposal of SW	4	2	4	2	N/A	5	4	5	5	5	3	5	3	4	5	N/A	3	4	5	4
56	f. Generation/disposal of toxic/hazardous wastes	3	1	4	1	N/A	4	4	5	4	5	5	5	4	5	4	N/A	3	5	5	5
57	g. Land use changes	3	N/A	2	2	N/A	5	3	5	5	3	3	3	4	3	5	N/A	3	3	5	4
58	h. Natural resources	3	2	4	4	N/A	5	4	5	5	5	5	5	4	4	4	N/A	3	4	5	5
59	i. Cultural resources	2	3	2	3	N/A	2	3	5	4	5	3	3	2	3	4	N/A	3	4	5	4
61	*3rd. Development, expansion and/or modernization of transportation facilities*																				
62	a. Water resources & demands	2	N/A	1	1	N/A	N/A	1	3	4	3	5	3	3	5	5	N/A	3	4	4	4
63	b.Water and wastewater quality	2	N/A	2	1	N/A	N/A	2	3	5	3	3	3	2	5	5	N/A	3	3	4	4
64	c. Air quality	2	5	4	1	N/A	N/A	3	5	5	5	5	3	5	4	4	N/A	4	4	5	5
65	d. Energy demands	3	4	5	1	N/A	N/A	3	5	5	5	5	5	5	5	5	N/A	4	4	5	5
66	e. Generation & disposal of SW	2	3	1	3	N/A	N/A	3	5	4	3	3	3	3	4	2	N/A	3	3	5	3
67	f. Generation& disposal of toxic/hazardous wastes	1	3	2	1	N/A	N/A	2	5	5	2	5	5	3	5	N/A	N/A	4	4	5	3
68	g. Land use changes	4	3	1	3	N/A	N/A	3	5	4	N/A	N/A	3	4	3	4	N/A	3	4	5	5
69	h. Natural resources	4	N/A	4	2	N/A	N/A	3	5	5	4	5	5	3	4	4	N/A	4	4	5	5
70	i.Cultural resources	2	1	1	2	N/A	N/A	3	3	4	4	3	3	3	3	4	N/A	3	3	5	4
71	j. Transboundary & regional effects	2	2	2	4	N/A	N/A	2	5	4	4	5	3	3	3	4	N/A	3	3	5	3

N/A: Not Answered

Annex C-9 Analysis Results for "All Respondents" Respondent Category

Code	Environmental Issues	Average	Minimum	Maximum	Median	Mode	Skewedness	Standard Deviation
18	**Env'tl Objectives FTA**							
19	1. Sustainability	4.6	1.0	5.0	5.0	5.0	-3.0	1.0
20	2. Remove Barriers	3.3	1.0	5.0	3.0	3.0	-0.9	1.0
21	3. Technical Capacity	4.3	2.0	5.0	4.5	5.0	-1.2	0.9
22	4. Pollution Control	4.7	3.0	5.0	5.0	5.0	-1.8	0.6
23	5. Compliance	4.3	2.0	5.0	5.0	5.0	-1.2	1.0
24	6. Voluntary Compliance	4.2	3.0	5.0	4.0	5.0	-0.4	0.8
25	7. Participation	3.9	1.0	5.0	4.0	5.0	-1.1	1.1
26	8. Performance Monitoring	4.2	2.0	5.0	4.5	5.0	-1.1	1.0
28	**Env'tl Principles & Practices to be Incorporated into FTA**							
29	1. Performance reporting	4.2	2.0	5.0	4.5	5.0	-0.8	1.0
30	2. Legal/institutional improvements	4.5	2.0	5.0	5.0	5.0	-1.9	0.9
31	3. Economic instruments	4.2	3.0	5.0	4.0	4.0	-0.4	0.8
32	4. Impact reviews	4.3	2.0	5.0	5.0	5.0	-1.2	0.9
33	5. Enforcement	4.2	1.0	5.0	4.5	5.0	-1.4	1.1
34	6. Self-management	4.0	1.0	5.0	4.0	4.0	-1.4	1.1
35	7. Emergency planning	4.3	1.0	5.0	5.0	5.0	-1.7	1.1
36	8. Continuing dialogue	3.9	1.0	5.0	4.0	4.0	-1.4	1.2
38	**Typology of Potential Env'tl Impacts**							
39	*1st. Demand for raw materials and other production process inputs*							
40	a. Water resources & demands	4.6	1.0	5.0	5.0	5.0	-2.9	1.0
41	b.Water and WW quality	4.4	1.0	5.0	5.0	5.0	-2.4	1.0
42	c. Air quality	3.6	2.0	5.0	3.5	3.0	0.1	0.9
43	d. Energy demands	3.8	1.0	5.0	4.0	4.0	-1.0	1.1
44	e. Generation/disposal of SW	4.0	2.0	5.0	4.0	4.0	-0.7	0.9
45	f. Generation/disposal of toxic/hazardous wastes	4.2	1.0	5.0	5.0	5.0	-1.5	1.1
46	g. Land use changes	3.5	1.0	5.0	3.5	3.0	-0.4	1.1
47	h. Natural resources	4.0	2.0	5.0	4.0	4.0	-0.6	1.0
48	i. Cultural resources	3.2	2.0	5.0	3.0	3.0	0.4	0.8
50	*2nd. Development , expansion and / or modernization of production sites:*							
51	a. Water resources & demands	4.5	1.0	5.0	5.0	5.0	-2.4	1.1
52	b.Water and WW quality	4.3	1.0	5.0	5.0	5.0	-2.0	1.1
53	c. Air quality	3.7	2.0	5.0	3.5	3.0	0.0	1.0
54	d. Energy demands	4.1	1.0	5.0	4.0	5.0	-1.4	1.2
55	e. Generation/disposal of SW	4.0	2.0	5.0	4.0	5.0	-0.7	1.0
56	f. Generation/disposal of toxic/hazardous wastes	4.0	1.0	5.0	4.0	5.0	-1.5	1.3
57	g. Land use changes	3.6	2.0	5.0	3.0	3.0	0.3	1.1
58	h. Natural resources	4.2	2.0	5.0	4.0	5.0	-1.1	0.9
59	i. Cultural resources	3.3	2.0	5.0	3.0	3.0	0.3	1.0
61	*3rd. Development , expansion and/or modernization of transportation facilities*							
62	a. Water resources & demands	3.2	1.0	5.0	3.0	3.0	-0.4	1.4
63	b.Water and wastewater quality	3.1	1.0	5.0	3.0	3.0	0.3	1.2
64	c. Air quality	4.1	1.0	5.0	4.0	5.0	-1.4	1.2
65	d. Energy demands	4.4	1.0	5.0	5.0	5.0	-2.0	1.1
66	e. Generation & disposal of SW	3.1	1.0	5.0	3.0	3.0	0.2	1.0
67	f. Generation & disposal of toxic/hazardous wast	3.4	1.0	5.0	3.5	5.0	-0.3	1.5
68	g. Land use changes	3.6	1.0	5.0	4.0	3.0	-0.7	1.1
69	h. Natural resources	4.1	2.0	5.0	4.0	4.0	-0.9	0.9
70	i.Cultural resources	3.0	1.0	5.0	3.0	3.0	-0.4	1.1
71	j. Transboundary & regional effects	3.4	2.0	5.0	3.0	3.0	0.3	1.1

N/A: Not Available

Annex C-10 Analysis of Final Responses and Comments

ANALYSIS OF RESPONSES AND COMMENTS ARRANGED BY TOPIC JULY 17TH, 2000

Process

The Newspaper add was published to invite Jordanian institutions and individuals to a public meeting to determine the potential environmental impacts from the FTA through " Environmental Response Forms" (ERF). This is the first public meeting of it's kind that had gathered governmental and non-governmental institutions, environmental institutions, different interest groups and business communities to discuss and determine major strategic issues; other consulting workshops and meetings have been on project bases levels. The Deputy Prime Minister honored the process where he explained the FTA contents to open discussions and interchange the information among the participants and the Jordanian FTA negotiating team. The respondents encouraged strongly this procedure as a way to maximize the volume of public input and participation as well as representing the public concerns and remarks on the agreement. The meeting took three hours where more time was needed for the completion of the forms. The respondents gave in the ERF in a week time with attached letters explaining their side of the argument for or against the agreement. All participants agreed and strongly demanded the signing of the FTA with the environmental articles attached to it. The following issues came up from the participants.

Environmental Impacts

1. Water Resource

a. Industries should install the latest and best technologies for recycling of water, and involving treated wastewater in the production process. The reuse of water must not be once i.e. in Sweden water is reused four times.

b. Tax reduction on innovative environmental technologies saves money on raw materials and energy, and reduces adverse environmental impacts.

c. Agricultural sector uses 75% of the annual water demand, while industries use 5% of the annual demand, reallocation of water between those two sectors should be revised as a priority. Since agricultural products contribute to 10% of the national economic output, then increased importation of agricultural and food products from the U.S may reduce the demand for domestic agricultural and food products to reduce water usage.

d. Natural resources such as water will not be affected to a very high degree since water is a very scarce resource in Jordan. Besides, it is recommended to limit industries that exploit natural resources especially water use.

e. Provide alternative sources of water, and preserve the current water reserve.

f. Jordan should not agree to establish any of the energy and water intensive industries.

g. Groundwater, soil, and air quality will be affected if preventive measures are not undertaken.

2. Air Quality:

a. Increase in production will increase air pollution.

b. Increased transportation sector activities will increase pollution (marine, air).

c. Industries (major plant sources) should install air quality control equipment to control gaseous emissions to comply with environment standard quality.

d. Improve the quality of fuels (lead-free gasoline, and low -sulfur fuel) and reduce the high CO concentration.

e. Jordan's transport costs are high, old vehicles emit polluting gas, these must be repaired or a small device at the source can be installed that prevents such emissions.

f. Burning solid wastes causes urban air pollution, air quality control equipment such as incinerators must be used or the whole process must be banned.

g. New technologies must treat industrial wastes (liquid, solid, gaseous).

h. Developing countries suffer less than industrialized countries from stack emissions and exhaust gases concentrations; FTA will cause more environmental risks to the society.

i. To ensure environmental quality, Ambient Air Quality standards must be received for the establishment of further projects in agriculture, development, commerce, and infrastructure.

3. Solid and Hazardous Wastes:

a. Solid wastes will increase as trade activity increases.

b. Radioactive or hazardous wastes must not be buried or dumped; a high tax must be enforced.

c. Jordan should not agree for a location site for hazardous material manufacturing.

4. Land Use:

a. Determine land use, and protect agricultural land, forest land, and natural reserves from urbanization, and irregular activities which will result from economic growth.

b. Increase in number of warehouses and storage areas, which may be on the expense of urban or agricultural areas.

c. Choose non-agricultural lands for the establishment of industries and industrial estates.

d. Jordan should not approve of test-site for experimenting new unapproved pharmaceuticals. Pharmaceutical products must not enter the Jordanian market until 15 years available in the U.S market incase of severe side effects in the future.

e. Minimal Environmental damage occurs if industry sites are located in desert areas.

f. Fertile land should be kept for agricultural practices, such as use of organic farming, pesticides control and management and others need a restructuring and high cost investment to ensure compliance to global standards and practices.

5. Energy:

a. Focus efforts towards spending on providing BAT for renewable energy and energy conservation programs to promote environmental efficiency.

b. Financial Burden on energy sources such as fuels, the demand on fuel will increase tremendously with an increase in price since Jordan is an importer of fuel. Fuel with less sulfuric content is recommended for large-scale industries and this is more expensive.

6. Natural Resources /Biodiversity:

a. Signing of the FTA may have negative impacts on natural and cultural resources due to increase in volume of economic activity without proper environmental controls.

b. To ensure better protection of finite natural resources, there must be an implementation of ascending tariff billing system for sensitive sectors such as water and electricity.

c. Exploitation of Jordan's natural resources.

d. Perform workshops with US participation for natural resources conservation especially environmental marine and land resources, and assess the impact of transportation sector on these resources.

e. Negative and positive social impacts will consequently impact the natural resources.

f. The origins of raw material (from Jordan or imported), such raw materials could be found in the Dead Sea (water, salt, phosphate, minerals).

7. Cultural Preservation:

a. Jordan should not agree to test-site for unethical issues (genetic energy for humans).

b. Create recycling culture.

c. BirdLife International in cooperation with RSCN has recently finalized the IBA/Important BirdLife Areas in the Hashemite Kingdom of Jordan Project. A book in Arabic language is currently being printed and will be available late July 2000. This report focuses on sites, 27 have been selected as very important for Birds. Recommendations for managing these sites are given. Some of the selected areas, e.g. Aqaba, Jordan Valley… could be affected in one-way or another by the agreement. Please take this report into consideration!

d. Importing cultural and advertising material will accompany imports of goods, and these cultural and advertising materials should be carefully chosen to suit the Jordanian society's mentality and morality.

Capacity Building and Training

a. Design an environmental policy towards FTA based on a full study on the impacts of trade liberalization on people and their environment to visualize the impacts of export- led development.

b. A capacity building fund should be established from NGOs and environmental protection agencies in Jordan to fund exporters on trade to the U.S for long- term status.

c. Impose training programs especially in environmental protection field for all environmental employees.

d. Emphasize the application of Environmental Impact Assessment process for new investments in Jordan.

e. Set reasonable environmental, health, safety and worker protection standards.

f. Construct sanitary landfills for solid and industrial wastes that are far from groundwater resources.

g. Capacity of having Jordanian labs is a must, and whether the U.S food inspection department will accept Jordanian product examination or not must be discussed.

Industries

1. Investment:

a. Encourage trade and industrial (local) sector to be committed towards environmental sustainable development.

b. Create a strategy that calls for high quality economic growth and investment, which brings high and stable levels of employment, makes prudent use of natural resources, protects the environment effectively and brings social progress by recognizing the needs of all people.

c. Induce tax incentives for quality investment (Environment friendly):

- Introduce possible environmental tax proposals, covering issues as diverse as energy, transport, and chemicals.
- Extend tax cuts on energy saving materials.
- Impose an additional tax on polluters.

d. If Jordan is to develop a dynamic and environmentally sustainable economy there has to be substantial investment in innovative environmental technologies.

e. Encouraging local industries to both develop and adopt advanced technologies will lead to an increased industrial competitiveness as inefficiency in the use of raw materials and energy is reduced; improved environmental performance through a reduction in pollution and waste will be cost effective.

f. FTA is one of the forceful elements to transform the Jordanian economy.

g. No trade barriers on our exports to avoid dumping small-scale industries.

h. FTA will help in the approach for sustainable development expanding exports.

i. Any abusive environmental measure such as "Disguised Protectionism" will cause un-investment. This practice is found with the Japanese practices against the European importation.

j. Environmental equipments to measure pollution and to prevent pollution are very expensive,

this may lead to more financial burden on the agreement causing it to be more cost full than beneficial, that's why certain countries do not sign such agreements.

k. The VAT % on our products should not be high as well as the American imports, and how much is the U.S willing to import from us is important.

l. Mutual marketing agreements for exporting product exchange is a must.

2. Protection Policies:

a. Safeguard and promote locally important small-scale economic activities.

b. Issue evidence of U.S environmental requirements on products exported to Jordan manufacturer.

c. Support the role of NGOs in environmental protection.

d. Environmental Laws must be implemented to sign FTA besides using ISO14010, ISO14011 ISO 14012 certifications to promote the industrial sector in Jordan.

e. Prevent marine pollution in the Gulf of Aqaba and prepare the port with certain protection policies, for example standard qualification ships should be used.

f. Preserve National treasures such as Aqaba coral reefs.

g. Design detailed standards for filling and packaging of substances by showing the details of ingredients whether for locally or foreign manufactured goods.

h. Consider establishing environmental taxes by Jordanian Government where sustainable use and minimum pollution projects can be released!

i. Improve the qualifications of GCEP to help in constructing the Ministry of Environment.

j. Concentrate on strengthening the environmental institutions to enable them to perform their assigned roles.

k. Prohibit any external foreign interference with manufacturing methods in Jordan, especially that Jordanian industries would not be able to tolerate such form of intrusion.

l. Institutionalize a three way partnership: citizens, private sector and government. Mobilize decision makers to activate laws to protect exporting very small industries from competitiveness and start implementing environment laws to depict how industries will react.

Regulatory Framework

1. Legislation:

a. Prepare legislation and proper qualifications to deal with environmental issues that may result from FTA.

b. Jordan sectors are not ready technically and legislatively for the FTA.

c. Jordan should adopt an environmental legislation, standards, and regulations that are

acceptable to the other party.

d. Design laws that would force industries to install wastewater treatment units, and water reuse and recycle programs for industrial wastes that can be recycled and reused.

e. Emphasize energy saving measures.

f. Anti-trust laws and regulations must be implemented for industry protection and Prevention of long-term monopoly power.

g. Insufficient regulation will not protect the environment nor promote health and welfare.

h. Government should provide some form of insurance for the foreign investors.

i. Financial burden may occur when Environment Laws are implemented.

j. Establish a monitoring office for trade conflict resolutions directed by U.S and Jordanian representatives.

2. Environmental Institutions:

a. Establish a Ministry of Environment.

b. Strengthening environmental institutions in Jordan through the provisions of training, related equipment and machinery

c. Establish a Higher Council / Committee to control and monitor activities of private sector related to environment regulations and ensures transparency of private sector and NGOs.

d. Unify environmental protection institutions in Jordan to limit and prevent doubling and scattering of responsibilities.

e. General framework must be imposed through the Environmental Protection Council that proposes environmental laws, regulations, by-laws, and decisions necessary for the execution of the Environmental Law articles and its subsequent regulations.

3. Enforcement of the Law:

a. Enforcement of the National Environmental Action Plan recommendations, issued in 1992.

b. Enforcement of Environmental Law No. 12 articles, finish drafting the by-laws and regulations required by this Law.

c. Enforcement of Jordanian laws upon the condition of their clarity, efficiency, and inclusion of the Free Trade principles.

4. Environmental Management:

a. The unavailability of natural resources should not be given as a reason for not accepting the challenge and developing the environmental management and sustainable development since many countries such as Japan do not have natural resources.

b. Monitor the consequences of foreign investments on the environment in Jordan.

c. Increase in maritime transport without available monitoring and control capabilities and equipment to deal with bilge and ballot waters. There is no equipment to deal with solid wastes, and no capability to treat hazardous wastes on a national level.

d. Design a single comprehensive environmental information database.

Community Involvement

1. NGOs:

a. Accentuate the media role of environmental NGOs.

b. NGOs should perform a survey of public opinion and experiences, note what is important, and provide recommendations to relevant institutions.

c. Carry out meetings between the NGOs and the private sector to discuss current problems and previous experiences of these institutions and sectors, and design recommendation measures for the government to take into consideration prior to signing of the agreement.

d. Cooperate with governmental institutions in designing an emergency plan to deal with any emergency situation or environmental hazard (oil seepage, water pollution, etc.) in order to unify all the efforts.

2. Awareness programs:

a. Environmental awareness may increase due to increased interest in standards and specifications

b. Carry out programs and extensive workshops to increase environmental awareness.

c. Awareness and re-qualification programs needed to enable institutions to qualify to environmental requirements for FTA.

d. Regional electricity networking decreased the electricity shortage problems; nevertheless, “Good Housekeeping Practices” environmental auditing and review should be implemented.

Annex C–11 The speeches of the speakers at the Public meeting.

The two main speakers in the public meeting that took place on July 2000 were His Excellency Dr. Mohammed Halaika and Dr. Alia Hatouk Boran.

The speech of His Excellency Dr. Mohammed Halaika –Deputy Prime Minister and State Minister for Economic Affairs

Good afternoon Your Excellencies,

Please accept my apology for being late as I was engaged with the Parliament session. I would like to thank you and thank the institutions for responding to this meeting which depicts the great awareness and importance of this topic. If you may have noticed, this is the first time we do such a national exercise with the participation of all institutions to discuss the environmental dimension in the agreement we are going to address in near future. I hope that this will become an approach to follow in the coming regional agreements and in the future international agreements. Although trade liberalizations and opened economy are very important topics, yet we have to weight similarly the social and environmental impacts as important topics in such agreements. In Jordan the situation is unique, the scarcity of water, the agricultural and cultivatable land where most of it is desert or semi desert. Besides, the population growth is still high compared to other countries. The preservation and protection of the natural resources, wealth and the environment are crucial issues that we think of seriously. His Majesty King Abdullah II AL-Hussein stated a clear opinion towards the importance of the environment and ordered the Cabinet to think seriously of a Ministry of Environment.

I would like to give you a briefing on the general features of the free trade agreement that we are negotiating on. There's no space for details; we shall hold other dialogues later with economic figures to inform you with more details of our efforts. The dialogue with the US started long time ago. The answer was that we couldn't enter this domain before joining the WTO. The Americans want Jordan to make clear steps in passing legislation to fulfill international requirements and assure Jordan's transparent role. This of course was the case when we joined the WTO. Those who accompanied us in those stages know that we have created new regulations and amended the old ones. There is another set of regulations that we must produce but we have a transition period to accomplish these steps.

Jordan, as known, made a decision long ago at the beginning of this decade to enter into bilateral free trade agreements. One was in 1995 where Jordan started the negotiations with the European Jordanian Partenariat Agreement, which was ratified, and we are waiting for the ratification of the European Parliaments to enforce that agreement starting next year. We made another step on the Arab arena when we were the first ones to sign the Arab free trade agreements, which are now in their third year of age. All these agreements clearly stipulate the reduction of custom duties along a period of time. In the Arab agreements, the reduction is symmetrical which means each country offers the same obligations of reduction. But there is a long list of exceptions – goods that are excluded due to environmental, protection or religious reasons- several banners and titles. These exceptions, we think, are an impediment in front of achieving all the Arab aspirations.

In the European Partnership Agreement there is another phenomenon known as asymmetry- that is the preferences given to Jordan are more than those given to the European Union? The Jordanian

goods according to this Agreement enter the European market exempted from the Customs duties on the first day of enforcement with a simple exception of this general rule. However, the European goods coming to us gets the customs reduction along 12 years. Thus, this principle of asymmetry is very important. There are other issues such as the cultural exchange, the social security, security and technical assistance.

However, the agreement we are now negotiating with the Americans required a large political effort exerted by His Majesty the King during last year. It was not easy to get the announcement of this agreement from The American President. For, America is not a country, which desires to sign such agreements. They have their internal trading system. They have their political and economic interests all over the world and they have a very limited number of such agreements. They have an agreement with Israel- it is their oldest agreement. The preferences of these agreements were extended for our Palestinian brothers after signing the peace accord. There is an agreement between the USA, Canada and Mexico called NAFTA. These are the only agreements. There are other 13 draft agreements kept in the American's drawers. The USA does not want to enter into such agreements. Thus, this is a great Jordanian achievement to get such a promise to enter into the agreement. We held two rounds of discussions with the American face to face in Washington and two rounds via the Satellite. Today, there is also a Jordanian team negotiating with the Americans via Satellite with regard to the Intellectual Property Topic. The general features of this Agreement may have been specific as a result of the negotiations. But there are many technical details that we must agree upon. There's some type of conflict between the democrats and the republicans in the Congress with regard to the form of this agreement. The republicans see it as a mere trade agreement and there's no need to be burdened with other topics. However, the American government represented by the democrats sees that the agreement must be an example model for future agreements (if any). Or at least an example to agreements between countries so that they include in addition to trade other topics especially environment. This controversy must be settled in the American part. But, we have a clear negotiation strategy to settle all these topics when we are required to reach an agreement.

In this round, we defined the basic elements or features of the accords. In another time, we went into details and we agreed in principle that the execution period is ten years. But in the bilateral American agreements, there is no asymmetry principle. There are no preferences given to you. The prevailing principle is reciprocity- what I give to you, you give me something similar to it. This is in fact a dilemma for the Jordanian negotiator at least theoretically speaking. The American side- as you know- is a main exporter of cars, cigarettes, and alcoholic beverages. In all the agreements we signed, these goods were excluded as they form a large revenue for the Treasury. There can be other reasons related to environment and health. There are protective requirements with regard to our local industries. We have a good industry of cigarettes. We have a medium scale industry of alcohol beverages. We are trying now to reach a satisfactory equation. We, on the Jordanian part, insist always that we either reach a different timetable of reduction or we give the Americans what is called the specific preferential treatment. That is the reduction will not reach zero after ten years. I rather reduce the customs duties to a certain ceiling to protect my local industry and protect my treasury revenues. This discussion has not been settled yet. In the field of the type of goods and their nature, we might have reached an agreement in which the majority of my exports or my future exports to the American market will get a preferential treatment on the ordinary trade exchange basis. That is there will be 70 or 80% of my exports to the USA getting a zero customs duties. This is a big achievement if we get it that means we have got something similar to the European

partnership agreement. Now, we are revising our lists with the Americans and we have continuous communication to reach a fir formula.

As you know the service sector has been included in the WTO. Jordan has specific commitments to fulfill. The American side is requiring the inclusion of the service sector agreement that is giving the right to the Americans to enter this sector in Jordan and vice versa. However, it is clear that the deviation will be to the favor of the American side if we agree. But we have our WTO agreements and our principle stand is that such obligations are the ones we can apply in such an agreement. We found out that Jordan signed an investment promotion agreement with the American side four or five years ago. This agreement was ratified by Jordan and not yet by the American side. It gives preferences to the American side that exceed my obligations under the WTO. This created for me a new dilemma as to how I must deal with it. The round that we held yesterday resulted in positive indicators. We may reach a mutual agreement that does not increase my burdens and does not require me to open my service sectors for investment although there are some appealing sectors. As you know, there is the legal constraint. There are some laws in Jordan such as the syndicate and association laws that specify the form of the relation of the investor in these fields. No lawyer, doctor or engineer can come to invest in Jordan.

There are the laws of associations and their conditions. These are not easy conditions. If we are required to discard these laws, we shall face a problem not only on the formal and legal side but also on the social one. However, there's a school of thought, which says that it is not possible for an American to come to Jordan for work. The living standards are different, the salaries all the life style is different…etc. However, our laws permit us to attract expertise such as consultants and others. The service sector is included and is being negotiated. I'm optimistic that we shall reach a satisfactory formula to benefit from and reduce the number of sectors that the American side can enter.

The other part is the Intellectual property rights. The Americans require us to fulfill some obligations in this field that exceed our obligations under the WTO. This is normal and logical. But, our principle is that our obligations a year ago shall be our present obligations. IT is not ordinary to go back to the Parliament to amend my laws and regulations that I have just amended. Jordan needs an institutional structure, an infrastructure and trained human cadres. Judges and border inspectors must be trained to apply these laws that we have already completed. WE cannot go again into this sphere that will cause me further problems of intervention and dealing.

Before I end up my speech, I'll be brief with regard to environment. Then, I give the floor to my colleagues Dr. Ali Bouran. Secretary General of the Ministry of Tourism who accompanied us in all our rounds and exerted a distinct effort in this topic of environment.

?A summary of the speech of Dr. Alia Hatouk Boran- Secretary General of the Ministry of Tourism.

The main objective of the meeting was to gather common ideas from participants and consider the influencing factors in the environmental review. The American opinion was expressed through the Federal register on what is expected from Jordan to execute in it's trade agreement with the USA Government, stressing on the importance of Environmental Protection Agency (EPA) in defining the environmental issues in this agreement. The initial topic in negotiations was the negative impacts of both countries on the natural environmental resources; they also discussed trade liberalization and bio-safe industrial products to the States. To raise the level of environmental products was the core

issue in the first round. The second round, the Environmental Review was agreed on to ensure transparency and credibility to this agreement thus implementing the Jordanian Law of Environment No.12. Besides Information Technology (IT) will help us draw the preliminary features with regard to the review.

This public meeting is extended to all people in Jordan from housewives to school children through the mail address, e-mail, and fax. A month later, we shall inform you of the results of this first session for Jordanian negotiators to specify their environmental issues with precaution. The environmental dimension brings more of strategic enforcement for this agreement to sustain and bring about more economic opportunities to promote sustainable development in the country. This meeting will enlighten our vision to tackle our internal deficient issues and to specify our legislative procedures for trade liberalization. On the external level: exports, safe industrial and agricultural products, trade liberalization is our field of concentration and the internal level gaps will be discussed in later sessions.

Annex C-12 Coalition paper of Local NGOs

The National Institutions expressed their opinions towards the FTA with its environmental impacts and concerns through the following coalition paper.

COALITION PAPER:

Attention: His Excellency Dr. Mohammad Al-Halaika
Subject: Free Trade Agreement between Jordan and the US

Greetings….

The Coalition of Environmental and Cultural NGOs expresses their sincere pleasure to the engagement of the Hashemite Kingdom of Jordan into signing a free trade agreement with the United States of America. This agreement will play a major role on the future prospects of this country, not only in the economic sector, but also in the social, environmental and cultural sectors.

A meeting has been held in the aim of achieving the required sustainable development, which was attended by a number of NGO representatives, to discuss the articles that we think should be included in the Agreement. We would like to inform you that there was great optimism among the members of the Coalition, since the general reaction has been positive towards the democratic method adopted by the Jordanian Government in approaching this issue. This is a manifestation of a civil method in approaching such sensitive issues and allowing the concerned institutions and NGOs to add their input and view points which are geared ultimately towards Jordan's sole benefit.

The Government's initiative to involve all parties in a short period of time to discuss the reasons and necessity of signing such an agreement has proved the sincerity and awareness level of the government to achieve true transparency. Therefore, we thank all brothers and sisters who participated in accomplishing this workshop, and demand from all responsible officials to institutionalize this democratic and civil approach and expand it to all other vital sectors.

The Coalition meeting that was held last week was important in its attempt to cover numerous and complicated environmental and cultural issues that may be affected directly or indirectly by the Agreement. The discussions made among all attendees and the important comments received by fax from members of the Coalition were essential. Their interventions, comments, and environmental and cultural reviews emphasized the bridge of cultural and technical cooperation between educational and cultural, and governmental and non-governmental institutions, both locally and internationally. This step is vital in order to benefit from these programs and to concur the progress in these fields. These programs aim to raise the level of performance to the nationally aspired levels, especially that we should not take lightly the basic and essential issues that affect our local economy and our environmental and cultural issues.

Following are the agreed upon recommendations.

Thanking you for your cooperation.

Coalition of Jordanian Environmental and Cultural NGOs.

- Provide Jordanian industries a grace period to allow them to improve their qualifications, and product quality to allow the industrial sector to compete in the US, through the provision of technical and financial support to the industrial sector especially in required environmental efficiency (ISO, etc).

- In concurrence with the previous paragraph adopt the roles of concerned parties in industries, quality assurance, specifications, exports promotion, and environment in following up, monitoring, and implementation of moral, technical, and financial support required during the granted grace period.

- Provide alternative sources for water used in industrial processes that fall under the FTA, to preserve the currently available water reserve and prevent any misuse of water that may affect the current strategic water reserve.

- Find new technologies and that will be suitable for industries included in the FTA to treat industrial wastes (liquid, solid, gaseous) according to the current local specifications. If local specifications are not available, then US specifications should be adopted as reference.

- The monitoring and executive role of the environmental NGOs should be accentuated. FTA should not affect this role, which is considered a supportive and complementary role to the role of the government in protecting the environment.

- Avoid establishment of industries in areas that are environmentally sensitive, or that have local or global importance such as nature reserves. Such locations are Ramsar in Azraq, heritage sites, cultural sites, and the Gulf of Aqaba with its coral reefs and marine biodiversity that is considered unique in the world.

- Prohibit trade with Jordanian or non-Jordanian cultural possessions to discourage illegal antiquities trade, and transforming Jordan into an illegal trade corridor (e.g. antiquities.)

- Enforce Labor Law and Jordanian Labor in this industry.

- Encourage the establishment of industries that require primary materials that are available in Jordan.

- Encourage information exchange between the parties through holding dialogues, training and educational workshops, and conferences to improve performance and environmental protection.

- Prohibit the establishment of any industry in Jordan that is prohibited from establishment in the USA.

- Exchange information on Early Warning System and movement of toxic and hazardous wastes.

- Adopt an institutional approach and cooperation work in for research and meetings.

- Provide incentives for importers of sheep aged less than 1.5 years, since it may not possible to prohibit importers from importing older aged cattle that may be contaminated with chemicals, hormones, or other undesirable substances.

- Provide suitable support to our agricultural sector, and agricultural exports as is done in North America to preserve our agricultural sector from collapse.

- Provide support and encouragement for the establishment of cow and sheep farms both future and existing that specialize in milk production.

- Prohibit the import of any foodstuffs that are not marketed in the country of origin.

- Prohibit the import of globally restricted substances such as pesticides (DDT), and medications.

- Adopt medical tests applicable in the USA for analysis of foodstuffs and their imported ingredients.

Arab Women Society
Friends of Archaeology
National Environment and Wildlife Society
Royal Society for the Conservation of Nature
Jordan Royal Ecological Diving Society
Fertile Crescent Society
Jordan Environment Society
Friends of Environment

Annex D Analysis of the Legal and Institutional Context for Environmental Protection in Jordan

JORDAN'S ENVIRONMENTAL PROTECTION LAW OF 1995

THE LEGISLATION

Prior to 1995, legislation to protect the environment in Jordan was fragmented across many sectors, regions, and activities. According to one source, there were 187 articles in at least 18 laws and 8 regulations that addressed the environment. [1] Most of these laws dated back to the 1950's-60's, a time when much less was understood about the environment or appropriate methods by which to manage and protect it.

This supposedly changed in 1995, when the Government of Jordan (GOJ) enacted a comprehensive environmental law, "Law No. (12) for the Year 1995 – Environmental Protection Law," commonly known as the EP Law of 1995 (EP Law). Composed of 36 Articles, the EP Law spelled out a general, but comprehensive new regime for managing and protecting Jordan's environmental resources. The two most prominent features of this law were 1) the consolidation of environmental protection authority in Jordan under one umbrella of legislation[2], and 2) the establishment of a new government entity called the "General Corporation for Environmental Protection" (GCEP) to serve as the central regulating authority for all environmental law in Jordan.[3]

Under the EP Law, the GCEP is to exercise the following functions:[4]

- Draw out the general policy for environmental protection, with the strategy and plans for implementation;
- Monitor environmental parameters;
- Prepare specifications and parameters for environmental components;
- Carry out research and studies relevant to the environment;
- Monitor utilities, public and private activities, including projects and companies, to ensure their compliance with environmental parameters and specifications;
- Lay down regulations, specifications, and environmental conditions;
- Supervise and conduct environmental impact assessments for projects;
- Lay down rules for handling hazardous waste;
- Prepare plans for environmental emergencies;
- Issue public awareness posters, etc.

The EP Law further states:

"The Corporation . . . . shall be entrusted with protecting the environment from pollution in relation to the sectors of water, air, soil, flora and fauna, marine environment, as provided for in this law."[5]

Passage of the EP Law was thus clearly a positive step forward for Jordan in terms of focusing its efforts and consolidating its authority to protect national environmental resources. But while

[1] Profile on the Environment: Jordan. Dr. Alia Hatough Bouran, June 2000.
[2] Article 35 of the EP Law states, in full: "Any provision in any other legislation that is inconsistent with the provisions of this Law shall be repealed."
[3] EP Law, Article 3.
[4] EP Law of 1995, Article 5.
[5] EP Law of 1995, Article 16.

improvements may exist on paper, several obstacles to the effective implementation of this law have led to frustrations within both the public and private sectors and to calls for policy reforms. The most commonly cited problems are:

1) the lack of transparency in the process by which projects receive an "environmental clearance"[6] under the EP Law;
2) redundancy and overlap in current regulatory practice; and
3) inadequate resources for the GCEP to effectively and efficiently carryout its environmental mandate.

These issues and others associated with them are discussed in more detail below.

LACK OF IMPLEMENTING REGULATIONS

While a number of factors seem to contribute to the lack of transparency in Jordan's environmental regulatory process, the slowness with which the GOJ has issued implementing regulations for many of the GCEP's mandates as stipulated in the EP Law is top among them. Since 1995, only four by-laws have been approved by the GOJ.[7] They are:

- Management Plan and Regulation of the GCEP
- Regulations against noise pollution
- Regulations on the management and transport of hazardous waste
- Regulations on the safety of marine resources and coastline

More than a dozen other by-laws necessary for the GCEP to carryout its mission have yet to be approved. Many are not even in draft stage. These include by-laws on clean air, solid waste management, soil conservation, water safety, protected areas, greenhouse gas emissions, agricultural practices, use of pesticides, desertification control, hazardous substances, and environmental impact assessment.

Delays in passing implementing regulations for the EP Law has left an administrative vacuum in Jordan that, by default, is being filled either by perceived discretionary actions on the part of GCEP officials and/or by falling back on out-dated, pre-existing standards spread out among various other government ministries. As a result, though in existence for five years, the GCEP provides an un-authoritative presence that overlays the previous status-quo regime, and this serves only to further fragment and obfuscate an already fragmented and opaque environmental clearance process. The "regime-by-default" that exists today is seen as a source of the lack of transparency and as a leading contributor to redundancy and overlap in current regulatory practice.

In this context, preparing and approving final regulations implementing the remaining mandates under the EP Law should be a high priority for the GOJ.

[6] In general terms, the "environmental clearance process" refers to the various steps required by the GCEP to show compliance under the EP Law and to receive final government approval for a proposed project. Among other things, this can include the preparation of an EIA.
[7] Profile on the Environment: Jordan. Dr. Alia Hatough Bouran, June 2000.

INSTITUTIONS UNDER THE EP LAW

The General Corporation for Environmental Protection (GCEP)

Institutional Organization: As stated previously, under the EP Law, the GCEP is to be the central regulatory authority for administering environmental protection law in Jordan. According to the EP Law, the GCEP is to have "a juridical entity" and " be independent financially and administratively." Nonetheless, the law also states that the GCEP "shall be under the auspices of the Minister (of Municipal and Rural Affairs and the Environment)."[8] This apparent contradiction in terms of status and location of the GCEP vis a vis other government institutions has been one source of confusion if not frustration for those dealing with environmental issues in Jordan. The function and authority of the GCEP is seemingly independent and comprehensive according to some sections of the EP Law,[9]while according to other sections (and in general practice), this function and authority is fractured and dispersed among other institutions within the GOJ (for more on this, refer to discussion regarding "the Council" below.)

Earlier analysis of the EP Law conducted under the AMIR contract in January 2000 indicated that the GCEP's location within the Ministry of Rural and Environmental Affairs (and the reporting obligations to that Ministry's Minister) creates administrative confusion for those seeking environmental clearance in Jordan and further adds layers of administrative burden that hampers efficiency. The analysis recommended that the GCEP be granted institutional and budgetary autonomy, either by making it a separate ministry or by placing it outside of the ministerial structure. So doing would eliminate confusion over the role of the GCEP vis a vis other ministries and would provide a more direct line of accountability and thus easier access and increased transparency for investors.

At a January 2000 IPC-sponsored[10] workshop held in Amman, Jordan, representatives from several Jordanian ministries were asked to vote on whether to accept this recommendation (one of many presented to the group). Upon voting, the recommendation was unanimously approved.[11] It is recommended that this issue be further examined and followed through on by the GOJ.

Resource Issues: While institutional autonomy for the GCEP seems to be a necessary step in order to streamline its activities and increase transparency, this alone will fail without adequate funding. Under the EP Law, the GCEP's funding is to come from a combination of sources, primarily, the general budget, donor monies and other public contributions, and fees for functions performed (these fees have yet-to-be established under regulation).[12] Based on conversations with GCEP officials, corroborated by other sources[13], the GCEP does not have adequate yearly funding to complete its mission, which has contributed significantly to problems with recruiting competent technical staff and its inability to draft implementing by-laws for the EP Law. The GCEP is

[8] EP Law of 1995, Article 3.
[9] EP Law, Article 9.
[10] "IPC" refers to the "Investment Promotion Corporation." It was recently renamed to the "Jordan Investment Board," or "JIB."
[11] See "Report on Workshop Addressing Recommendations to Improve the Environmental Clearance Process in Jordan," Jan., 2000.
[12] EP Law of 1995, Articles 12-14.
[13] Profile on the Environment: Jordan. Dr. Alia Hatough Bouran, June, 2000.

essentially forced to do its best to comply with unfunded mandates while being chronically understaffed and low on technical expertise.

As a policy matter, the GCEP's ability to fulfill its obligations under the EP Law should not be subject to the uncertain receipt of public contributions, but rather supported by a guaranteed minimum budget allocation allowing it to meet its environmental protection duties. Adequately funded, the GCEP should develop internal training programs, establish standards for competence, creative recruitment programs that reach talented and skilled workers, and build cooperative programs with other technical organizations to exchange expertise and resources, all of which will aid the environmental clearance process in Jordan and contribute to an improved investment climate.

Even beyond this, however, the GCEP needs capacity-building assistance in environmental management. Specific areas for training should include: environmental impact assessment (preparation and review); enforcement; technical training across different environmental media (air, water, waste management); human resources management; and other areas that still need to be more precisely determined.

In this context, it is recommended that the GOJ consider providing the GCEP with true budgetary autonomy and guaranteed minimum yearly funding allocations sufficient to carry out its essential mandates. It is further recommended that the GOJ seek resources to assist the GCEP with acquiring trained personnel and capacity-building assistance.

"Higher Council for Environmental Protection" (the Council)

A second significant government body in Jordan granted authority over the environment under the EP Law is the "Higher Council for Environmental Protection" (the Council). The Council is composed of a broad representation of primarily public sector officials, including a full range of ministerial officials, many of whom carry out non-environment-based mandates.[14]

The Council is featured prominently in the EP Law and is given extremely broad and far-reaching authority over the functions and mandates of the GCEP. In particular, Article 8 of the EP Law states that the Council shall assume the following powers and responsibilities:[15]

A. Approve the general policy laid down for environmental protection, the national strategy and related plans and programs thereto.

[14] The full list of Council members is as follows: Minister of Municipal and Rural Affairs and Environment (President), Director General (VP), Secretary General of the Greater Amman Municipality, Secretary General of the Aqaba Regional Authority, Director General of Civil Defense, Secretary General of the Ministry of Municipal and Rural Affairs and Environment, Secretary General of the Ministry of Health, Secretary General of the Ministry of Water and Irrigation, Secretary General of the Ministry of Energy and Mineral Resources, Secretary General of the Ministry of Industry and Trade, Secretary General of the Ministry of Planning, Secretary General of the Ministry of Interior, Secretary General of the Ministry of Education, Secretary General of the Ministry of Labor, Director General of the Housing and Urban Development Corporation, President of the Jordan Environment Society, President of the Royal Society for the Conservation of Nature, President of the Royal Scientific Society, President of the Jordanian Society for Combating Desertification, and Badia Development, Three individuals of expertise and specialty selected by the Ministry of Municipal and Rural Affairs and Environment for a term of two years, subject to renewal. (EP Law, Article 6)

[15] EP Law, Article 8.

B. Approve standards and specifications for environmental elements.
C. Approve the draft annual budget for the corporation and the submission thereof to the Council of Ministers.
D. Approve the GCEP's final accounts and annual report.
E. Propose draft laws and regulations in connection with the environment.
F. Pass directives and resolutions necessary for implementation of the provisions of this law and regulations made by virtue thereof.
G. Approve emergency plans for the confrontation of disasters.
H. Issue directives determining the fees charged by the GCEP for the services it provides that relate to the environment.
I. Deliberate in all matters concerned with the environment referred by the Minister (of Municipal and Rural Affairs and Environment) or the Director General to the Council.

Several concerns about the effective and efficient administration of Jordan's EP Law emerge with respect to the role of the Council vis a vis the GCEP. First, Article 8 can clearly be interpreted as subordinating the GCEP to the authority of the Council, despite the reference in Article 9 to the GCEP as "the competent authority in the Kingdom for environmental protection." With its comprehensive approval authority over the GCEP's functioning and responsibilities, it is *the Council* that determines environmental policy and programs, sets environmental standards and regulation, and ultimately decides the annual budget and other sources of funding for the GCEP.

As a policy matter, the GOJ may want to consider whether it is appropriate to have non-environment-based ministries determining environmental policy and regulations in Jordan. The flip side of this question is whether policy and regulations governing the environment should be the exclusive role of the GCEP as the "competent authority in the Kingdom for environmental protection." The fact that many members of the Council also represent ministries with non-environmental mandates, but which conduct activities that potentially affect the environment, arguably calls into question the appropriateness of giving them ultimate authority over the functions and the budget of the GCEP.

It should be emphasized that members of the Council may very well have valuable technical and other expertise to contribute to the GCEP. This contribution, however, can be made without placing the GCEP in a subordinated role. Indeed, consultation between the GCEP and other ministries can and should be encouraged.

Other concerns addressed by this change in role for the Council include the need to improve the overall efficiency and effectiveness of environmental protection and the environmental regulatory process in Jordan. Confusion over the role of the GCEP vis a vis other ministries is also alleviated along with the fractious effect that the Council's current role creates on environmental management.

In this context, it is recommend that the GOJ consider amending the role of the Council to be that of advisor to the GCEP.

Taken together, these recommendations will provide the GCEP with the authority and the resources needed to fulfill its mandate under the EP Law, not only on paper, but in actual practice.

Annex E Multilateral Environmental Agreements to which Jordan is a Signatory

Jordan Participation in Global and Regional Conventions, Treaties, and Agreements Protecting the Environment

Title	Signature	Ratification
1- Constitution of the United Nations Educational, Scientific and Cultural Organizations; *London, 1945*	1950	
2- Convention on the Protection and Use of Transboundary Watercourses and International Lakes; *Helsinki, 1992*	1998	
3- International Convention for the Prevention of Pollution of the Sea by Oil, 1954, as amended in 1962 and 1969; *London, 1954*		1963
4- Treaty Banning Nuclear Weapon Tests in The Atmosphere, in Outer Space and Under Water; *Washington, 1963*	1963	1964
5- Treaty on the Non-Proliferation of Nuclear Weapons; *Washington, 1968*	1968	1970
6- Treaty on the Prohibition of the Emplacement of Nuclear Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil thereof; *Washington, 1971*	1971	1971
7- Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter; *Washington, 1972*	1973	1974
8- Convention concerning the Protection of World Cultural and Natural Heritage; *Paris, 1972*		1975
9- Convention on the Prohibition of the Development Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction; *Washington, 1972*	1972	1975
10- International Convenant on Economic, Social and Cultural Rights; *New York, 1966*	1972	1975
11- Constitution of the United Nations Industrial Development Organization, *Vienna, 1979*	1981	1982
12- Protocol to amend the Convention on Wetlands of International Importance especially as Waterfowl Habitat*; Paris, 1982*	1984	1984
13- Regional Convention for the Conservation of the Red Sea and of the Gulf of Aden Environment (PERSEGA); *Jeddah, 1982*	1982	1988
14- Protocol concerning Regional Co-operation in Combating Pollution by Oil and other Harmful substances in Cases of Emergency*; Jeddah, 1982*	1982	1988
15- Convention on the Control of Transboundary Movements of Hazardous Wastes and Their	1989	1989

Disposal; *Basel, 1989*		
16- United Nations Framework Convention on Climate Change; *New York, 1992*	1992	1993
17- Convention on Biological Diversity; *Rio de Janeiro, 1992*	1992	1993
18- Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer; *Copenhagen, 1992*		1995
19- Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982; *New York, 1994*		1995
20- Agreement for the Establishment of the Near East Plant Protection Organization; *Rabat, 1993*	1993	1995
21- International Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa; *Paris, 1994*	1995	1996
22- Agreement on the Conservation of African-Eurasian Migratory Waterbirds; *The Hague, 1995*	1997	1997
23- Comprehensive Nuclear Test-Ban Treaty; *New York, 1996*	1996	1998
24- Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer; *Montreal, 1997*		1999
25- Convention on Wetlands of International Importance especially as Waterfowl Habitats; Ramsar, 1971; and Amendments to Art. 6&7; *Regina (Canada), 1987*		
26- Convention on International Trade in Endangered Species of Wild Fauna and Flora; *Washington, 1973*; and Amendment (Art.XI); *Bonn, 1979*		
27- International Convention for the Prevention of Pollution from Ships (MARPOL); *London, 1973*		
28- International Convention for the Safety of Life at Sea (SOLAS); *London, 1974*		
29- Amendments to Annexes to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter concerning Incineration at Sea; 1978; and Amendment; 1980		
30- United Nations Convention on the Law of the Sea; *Montego Bay, 1982*		
31- Convention for the Protection of the Ozone Layer, *Vienna, 1985*		
32- Protocol on Substances that Deplete the Ozone Layer; *Montreal, 1987*; and Amendment; *London,*		

1990		